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1995 MATCHED ANTHROPOMETRIC DATABASE OF U.S. MARINE CORPS PERSONNEL: SUMMARY STATISTICS

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Anthropometric databases containing extensive body size and shape information are critial for the proper design and sizing of military clothing, equipment and workstations. The last anthropometric survey of United States Marine Corps males was conducted in 1966. No anthropometric data has been collected on Marine Corps females. Statistical matching procedures were used to create an updated USMC anthropometric database of 76 dimensions for males and females from the 1988 Anthropometric Survey of U.S. Army Personnel (ANSUR). The summary statistics and descriptions of the 76 selected dimensions are presented along with tariffs for 42 clothing items.

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PREFACE

The United States Marine Corps (USMC) matched anthropometric databases summarized in this report were created from a large existing database of US Army personnel using a validated matching procedure. This study, conducted between October 1995 and November 1995, is the first to demonstrate that data collected on US Army personnel during the 1988 Anthropometric Survey of US Army Personnel (ANSUR) can be used to create anthropometrically representative databases for another US military population, the USMC. The validation procedure involved collecting limited anthropometric data from a random sample of USMC personnel that could be compared to matched databases derived from ANSUR. This project was completed by the US Army Natick, Research, Development and Engineering Center with GEO-CENTERS, INC under contract number DAAK-60-90-D-000-2, Delivery Order 080 with funding provided by Marine Corps Systems Command, USMC.

The successful completion of this project would not have been possible without the vision and support of Mr. Doug Davis and Major B.A. Smith of the USMC. In addition, the authors would like to thank the command and support staff of Camp LeJeune and Camp Pendleton for their support during the data collection phase of this project.

A number of personnel from GEO-CENTERS, INC were critical for the completion of this study. The measuring team consisted of Ms. Nancy Bell, Ms. Heather Foti, Mr. Henry Case and Ms. Wendy Todd . Mr. Steve Paquette, Anthropology Group Coordinator, US Army Natick Research, Development and Engineering Center, served as the contract representative. Mr. David Brantley, also at Natick, was instrumental in the preparation of the final manuscript.

1995 MATCHED ANTHROPOMETRIC DATABASE OF U.S. MARINE CORPS PERSONNEL: SUMMARY STATISTICS

CHAPTER I

MATCHED ANTHROPOMETRIC DATABASES

INTRODUCTION

Anthropometric databases containing extensive body size and shape information are critical for the proper design and sizing of clothing, protective equipment and workstations used by military populations. These databases must be assessed periodically and updated to ensure that they accurately describe the populations they purport to represent. For the United States Marine Corps (USMC) the most recent anthropometric survey of the male Marine population was conducted in 1966, and no anthropometric data have been collected on females[1].

To update the anthropometric database, the USMC requested that the US Army Natick Research, Development and Engineering Center conduct a validation study to determine if statistical matching could be used to create accurate male and female USMC anthropometric databases using data collected during the 1988 Anthropometric Survey of US Army Personnel (ANSUR). Previous research showed that statistical matching can be used to successfully create databases that anthropometrically represent the US Army Pilot population[2]. In addition, when USMC and US Army anthropometric data from the 1966 survey were compared, the two populations exhibited very similar anthropometric distributions in both body size and shape[1].

The matching procedures used to create the male and female USMC databases presented in this report were validated using anthropometric data collected from a randomly selected sample of USMC personnel. A total of 12 anthropometric dimensions, carefully chosen to accurately describe all major segments of the body, were measured on a valid sample of 470 female and 493 male marines during the summer of 1994. These subjects were measured at Camp Pendleton, CA and Camp LeJeune, NC. For a full description of the validation study, please consult Validation of a Statistical Matching Procedure Used to Create the United States Marine Corps Anthropometric Databases.[3]

The matching procedures that were validated and used to create the USMC matched databases are described below. Chapter II begins with a complete description of the anthropometric landmarks used as reference points to measure the 76 summarized dimensions. The summary statistics and descriptions of the dimensions follow. The final section presents purchasing tariffs for a number of clothing and protective equipment

items that are frequently used by Marines. Observer error values and a glossary of anatomical terms are presented in the appendices.

DATABASE MATCHING AND VALIDATION

A number of factors must be considered to successfully create a statistically matched anthropometric database. Fist, the demographic distribution of the target population must be determined. Age and race are the primary demographic variables to be controlled since together they explain a large proportion of the anthropometric variation present in a given population[4,5,6]. Before statistically matched databases could be created, the most recent age and race profile of the USMC population had to be determined. February 1995 data, the most current demographic data available at the beginning of the validation study, were used (see Tables 1 and 2).

Since the number of USMC subjects measured for the validation study did not have the same demographic distribution as that of the overall USMC population (see Tables 3 and 4), they were weighted using the weighting factors presented in Tables 5 and 6. The weighting process served to emulate the demographic distribution of the overall USMC population based on the number of valid measured USMC subjects (see Tables 7 and 8). Because the total number of subjects in the measured data sets was relatively small, it was not advisable to use stratified random sampling that would have resulted in a loss of 128 male subjects and 135 female subjects to create a demographically representative database.

The weighting factors were simply calculated using division. For example, a total of 113 White males were measured in the ≤ 20 age category. As shown in Table 7, only 70 subjects should occupy this cell based on the current USMC male demographic data and the demographics distribution of the measured sample. By dividing 70 by 113, the weighting factor of .6195 is calculated. Thus, each of the 113 subjects in this age/race group will be given a weight of only .6195, instead of a full weight of 1. With the weighting factor, all 113 subjects are used, but they only have the impact of 70 subjects (i.e., 113 x .6195 = 70). The appropriate weighting factors were applied to both the male and the female data sets for the entire analysis.

Table 1. USMC Male Demographic Distribution February 1995							
	White	Black	Hispanic	Asian/Pa Islander	American Indian	Mixed/ Other	Total
≤ 20	31821 19.16%	5178 3.12%	4502 2.71%	693 0.42%	392 0.24%	507 0.31%	43093 25.95%
21-24	41689 25.10%	7667 4.61%	5626 3.39%	994 0.60%	481 0.29%	656 0.39%	57113 34.39%
25-30	21078 12.69%	5602 3.37%	2270 1.37%	546 0.33%	233 0.14%	299 0.18%	30028 18.08%
≥ 31	25168 15.15%	7384 4.44%	2300 1.38%	528 0.32%	201 0.12%	275 0.17%	35856 21.59%
Total	119756 72.10%	25831 15.55%	14698 8.85%	2761 1.66%	1307 0.79%	1737 1.04%	166090 100.00%

Table 2. USMC Female Demographic Distribution February 1995							
	White	Black	Hispanic	Asian/Pa Islander	American Indian	Mixed/ Other	Total
≤ 20	1322 17.05%	385 4.96%	271 3.50%	50 0.64%	40 0.52%	26 0.34%	2094 27.01%
21-24	1456 18.78%	551 7.11%	269 3.47%	50 0.64%	46 0.59%	42 0.54%	2414 31.14%
25-30	882 11.38%	476 6.14%	134 1.73%	32 0.41%	21 0.27%	36 0.46%	1581 20.39%
≥ 31	987 12.73%	510 6.58%	125 1.61%	13 0.17%	12 0.15%	17 0.22%	1664 21.46%
Total	4647 59.94%	1922 24.79%	799 10.31%	145 1.87%	119 1.53%	121 1.56%	7753 100.00%

Table 3. Valid Measured USMC Male Demographic Distribution							
	White	Black	Hispanic	Asian/Pa Islander	American Indian	Mixed/ Other	Total
≤ 20	113 22.92%	23 4.66%	15 3.04%	2 0.40%	1 0.20%	12 2.43%	166 33.67%
21-24	95 19.27%	22 4.46%	18 3.65%	2 0.40%	2 0.40%	5 1.01%	144 29.21%
25-30	53 10.75%	21 4.26%	5 1.01%	1 0.20%	1 0.20%	6 1.22%	87 17.65%
≥ 31	65 13.18%	21 4.26%	5 1.01%	1 0.20%	1 0.20%	3 0.61%	96 19.47%
Total	326 66.12%	87 17.65%	43 8.72%	6 1.22%	5 1.01%	26 5.27%	493 100.00%

Table 4. Valid Measured USMC Female Demographic Distribution							
	White	Black	Hispanic	Asian/Pa Islander	American Indian	Mixed/ Other	Total
≤ 20	74 15.74%	23 4.89%	20 4.26%	0 0.00%	5 1.06%	11 2.34%	133 28.30%
21-24	78 16.60%	35 7.45%	12 2.55%	4 0.85%	4 0.85%	9 1.91%	142 30.21%
25-30	49 10.42%	28 5.96%	11 2.34%	0 0.00%	2 0.42%	7 1.49%	97 20.64%
≥ 31	54 11.49%	31 6.60%	10 2.13%	1 0.21%	0 0.00%	2 0.42%	98 20.85%
Total	255 54.26%	117 24.89%	53 11.28%	5 1.06%	11 2.34%	29 6.17%	470 100.00%

Table 5. Weighting Factors for Valid Measured USMC Males to Match February 1995 USMC Demographic Distribution

	White	Black	Hispanic	Asian/Pa Islander	American Indian	Mixed/ Other
≤ 20	0.6195	0.4783	0.6667	1.0000	1.0000	0.0833
21-24	0.9684	0.7727	0.6667	1.0000	0.5000	0.2000
25-30	0.8679	0.5714	1.0000	1.0000	1.0000	0.1667
≥ 31	0.8462	0.7619	1.0000	1.0000	1.0000	0.3333

Table 6. Weighting Factors for Valid Measured USMC Females to Match February 1995 USMC Demographic Distribution

	White	Black	Hispanic	Asian/Pa Islander	American Indian	Mixed/ Other
≤ 20	0.7973	0.7391	0.6000	0.0000	0.4000	0.0909
21-24	0.8333	0.7143	1.0000	0.7500	0.5000	0.2222
25-30	0.7959	0.7500	0.5454	0.0000	0.5000	0.2857
≥ 31	0.8148	0.7419	0.6000	1.0000	0.0000	0.5000

Table 7. Demographically Representative Distribution of Valid Measured USMC Males Using February 1995 USMC Data

	White	Black	Hispanic	Asian/Pa Islander	American Indian	Mixed/ Other	Total
≤20	70 19.18%	11 3.00%	10 2.70%	2 0.60%	1 0.30%	1 0.30%	95 26.13%
21-24	92 25.20%	17 4.50%	12 3.30%	2 0.60%	1 0.30%	1 0.30%	125 34.23%
25-30	46 12.60%	12 3.30%	5 1.50%	1 0.30%	1 0.30%	1 0.30%	66 18.32%
≥31	55 15.07%	16 2.10%	5 0.60%	1 0.00%	1 0.00%	1 0.00%	79 10.81%
Total	263 72.05%	56 15.32%	32 8.71%	6 1.80%	4 0.90%	4 0.90%	365 100.00%

Table 8. Demographically Representative Distribution of Valid Measured USMC Females Using February 1995 Data

	White	Black	Hispanic	Asian/Pa Islander	American Indian	Mixed/ Other	Total
≤20	59 17.15%	17 4.94%	12 3.49%	0 0.00%	2 0.58%	1 0.29%	91 26.45%
21-24	65 18.90%	25 7.27%	12 3.49%	3 0.87%	2 0.58%	2 0.58%	109 31.69%
25-30	39 11.34%	21 6.10%	6 1.74%	0 0.00%	1 0.29%	2 0.58%	69 20.06%
≥31	44 12.79%	23 6.69%	6 1.74%	1 0.29%	0 0.00%	1 0.29%	75 21.80%
Total	207 60.17%	86 25.00%	36 10.46%	4 1.16%	5 1.45%	6 1.74%	344 100.00%

The second consideration when developing a matched anthropometric database is whether or not the database from which the match is being drawn needs to be truncated. Since the ANSUR database is composed of US Army personnel who have less stringent entry and retention requirements than do the USMC, truncation may be a critical step in developing an accurate matched database. Table 9 presents the Weight for Height retention standards for USMC male and female personnel[7].

When the male validation sample was compared to these standards, it was found that the measured Marines met all of the standards for Height and minimum Weight for Height. However, 123 (24.8%) of the measured subjects exceeded the maximum Weight for Height standards. A similar observation was made when the measured USMC female sample was compared to the standards. Most of the female Marines met all of the standards for Height and minimum Weight for Height. Only three subjects did not meet the minimum Weight requirement for their Height, but in each case the individual was no more than 1.5 pounds below the minimum requirement. Since Weight can easily fluctuate by 1.5 pounds during the course of a single day, these individuals were not considered in violation of the standards. A total of 204 (42.5%) measured female Marines exceeded the maximum Weight standard for their Height. Thus, the Height and minimum Weight requirements alone were used to truncate the ANSUR database prior to matching. After truncation, a total of 5103 male subjects and 3446 female subjects remained available for matching.

Table 9. Height and Weight Retention Standards for Male and Female USMC Personnel (MCO P6100.3H)

	Female Standards		Male Standards	
Height	Min Weight	Max Weight	Min Weight	Max Weight
58*	90	121	Not Acceptable	Not Acceptable
59	92	123	Not Acceptable	Not Acceptable
60	94	125	100	160**
61	95	127	102	160
62	98	130	103	160
63	100	134	104	160
64	102	138	105	160
65	104	142	106	165
66	106	147	107	170
67	109	151	111	175
68	112	156	115	181
69	115	160	119	186
70	118	165	123	192
71	122	170	127	197
72	125	175	131	203
73	Not Acceptable	Not Acceptable	135	209
74	Not Acceptable	Not Acceptable	139	214
75	Not Acceptable	Not Acceptable	143	219
76	Not Acceptable	Not Acceptable	147	225
77	Not Acceptable	Not Acceptable	151	230
78	Not Acceptable	Not Acceptable	153	235

*Measurements $\geq$ 0.5 inches rounded up to the next higher inch and measurements < 0.5 inches rounded down, thus each height category is actually a range (i.e., 68 = 67.5 to 68.5).

**64 inches is the shortest height with a maximum weight standard for males, therefore it was also applied to the shorter height categories.

To create the USMC male matched database, the Weight distribution of the measured USMC male sample was divided into thirds using the 33.3% (774.929) and the 66.6% (830) values. The demographic distribution of the USMC sample was then determined for each of the Weight ranges, as was that of the truncated ANSUR sample (see Tables 10 and 11). The weighting factors for each of the Race/Age/Weight cells presented in Table 12 were calculated by dividing the number in Table 10 by that in Table 11 for each of the cells. These weighting factors were applied to the truncated ANSUR male database, retaining a total of 4447 subjects.

On average and throughout the percentiles the measured USMC male sample is approximately 7 mm taller for Sitting Height compared to the match. While this difference is statistically significant, the magnitude of the difference is not large considering that the combined interobserver error rate is 6.64 mm. Furthermore, this dimension is usually used for workstation/cockpit design and the difference is not large enough to have an adverse impact when used for such a purpose. Differences between the USMC male validation sample and the matched database were negligible for the remaining 11 dimensions. Thus, this matching method was validated and when the weighting factors in Table 12 are applied to the truncated male ANSUR database, the resulting data are anthropometrically representative of the current male USMC population.

Table 10. USMC Male Demographically Representative Sample Divided into Three Weight Groups Using Percentiles

	White	Black	Hispanic	Asian/Pa Islander	American Indian	Mixed/ Other	Total
Weight < 33.3% (744.929)							
≤ 20	34	3	5	0	0	0	42
21-24	33	7	6	1	1	0	48
25-30	10	3	1	0	0	1	15
≥ 31	8	5	1	0	1	0	15
Weight 33.3% to 66.6% (744.929 - 830.000)							
≤ 20	18	6	4	1	0	1	30
21-24	32	8	3	0	0	0	43
25-30	16	3	2	0	1	0	22
≥ 31	22	4	3	1	0	1	31
Weight > 66.6% (830.000)							
≤ 20	18	2	1	1	1	0	23
21-24	27	2	3	1	0	1	34
25-30	20	6	2	1	0	0	29
≥ 31	25	7	1	0	0	0	33
Total	263	56	32	6	4	4	365

Table 11. Demographic Distribution of Truncated ANSUR Males in Three Weight Groups

	White	Black	Hispanic	Asian/Pa Islander	American Indian	Mixed/ Other	Total
Weight < 33.3% (744.929)							
≤ 20	196	201	130	30	14	71	642
21-24	159	155	142	60	15	77	608
25-30	151	119	137	65	5	44	521
≥ 31	110	88	112	100	3	30	443
Weight 33.3% to 66.6% (744.929 - 830.000)							
≤ 20	130	99	50	15	7	29	330
21-24	147	107	81	14	10	46	405
25-30	107	107	85	28	10	27	364
≥ 31	119	105	98	43	1	20	386
Weight > 66.6% (830.000)							
≤ 20	78	65	25	4	1	17	190
21-24	105	101	56	18	9	40	329
25-30	144	136	59	27	4	25	395
≥ 31	175	167	72	34	5	37	490
Total	1621	1450	1047	438	84	463	5103

Table 12. Race/Age/Weight Match Weighting Factors for Truncated ANSUR Males

	White	Black	Hispanic	Asian/Pa Islander	American Indian	Mixed/ Other
Weight < 33.3% (744.929)						
≤ 20	.173469	0.014925	0.038462	0.000000	0.000000	0.000000
21-24	.207547	0.045161	0.042254	0.016667	0.066667	0.000000
25-30	.066225	0.025210	0.007299	0.000000	0.000000	0.022727
≥ 31	.072727	0.056818	0.008928	0.000000	0.333333	0.000000
Weight 33.3% to 66.6% (744.929 - 830.000)						
≤ 20	0.138462	0.060606	0.080000	0.066667	0.000000	0.034483
21-24	0.217687	0.074766	0.037037	0.000000	0.000000	0.000000
25-30	0.149533	0.028037	0.023529	0.000000	0.100000	0.000000
≥ 31	0.184874	0.038095	0.030612	0.023256	0.000000	0.050000
Weight > 66.6% (830.000)						
≤ 20	0.230769	0.030769	0.040000	0.250000	1.000000	0.000000
21-24	0.257143	0.019802	0.053571	0.055556	0.000000	0.025000
25-30	0.138889	0.044118	0.033898	0.037037	0.000000	0.000000
≥ 31	0.142857	0.041916	0.013889	0.000000	0.000000	0.000000

The validated matching method for the female USMC population consisted of dividing the Height and Weight distributions of the measured USMC female sample into thirds using the 33.3% (Height=1605.389, Weight=744.929) and the 66.6% (Height=1655.646, Weight=830.000) values. As shown in Tables 13 and 14, the demographic distributions of the USMC sample and of the truncated ANSUR data set were determined for each of the 9 Height/Weight cells. Weighting factors were calculated by dividing the number in Table 13 by that of the number in Table 14 for each of the corresponding cells (results presented in Table 15). A total of 2888 subjects were retained in this matching procedure.

When the matched database means are compared to those of the measured USMC female sample, Head Circumference continued to exhibit a significantly different mean when the interobserver error rates were considered in the analysis. The magnitudes of the differences in means for any of the dimensions considered, however, are not large enough to impact the development of protective clothing, equipment or workstations. In addition, this matching procedure produced the smallest differences overall for both means and percentiles of all the matching procedures investigated. The application of the weighting factors presented in Table 15 to the truncated female ANSUR database yields a database that can be used to accurately estimate the anthropometry of the current USMC female population.

A carefully chosen selection of 76 dimensions from the USMC anthropometric databases are summarized in this report. Although not all 132 dimensions measured during ANSUR are summarized in this the volume, the USMC matched databases contain the full series of measurements. For a detailed discussion of ANSUR and information on all of the measured dimensions, please refer to the 1988 Anthropometric Survey of US Army Personnel: Methods and Summary Statistics[8].

Table 13. Demographically Representative Sample Divided into Nine Height/Weight Groups Using Percentiles

	Height < 33.3%						Height 33.3% to 66.6%						Height > 66.6%						
	W*	B	H	AP	AI	MO	W	B	H	AP	AI	MO	W	B	H	AP	AI	MO	Total
Weight < 33.3%																			
≤ 20	13	4	5	0	0	0	2	0	1	0	0	0	1	0	0	0	0	0	26
21-24	12	3	3	2	1	0	10	3	3	0	0	0	3	3	0	1	1	0	45
25-30	6	2	1	0	0	0	4	2	1	0	0	1	1	1	0	0	0	0	19
≥ 31	7	3	2	0	0	1	6	0	0	0	0	0	2	1	0	0	0	0	22
Weight 33.3% to 66.6%																			
≤ 20	7	1	2	0	0	0	8	4	2	0	0	1	3	3	0	0	0	0	31
21-24	7	2	2	0	0	0	10	4	0	0	0	1	7	4	1	0	1	0	39
25-30	4	3	1	0	0	0	3	0	0	0	0	0	4	2	1	0	1	0	19
≥ 31	4	4	0	0	0	0	4	4	1	0	0	0	7	1	1	0	0	0	26
Weight > 66.6%																			
≤ 20	2	1	0	0	0	0	10	2	1	0	0	0	14	2	1	0	0	0	33
21-24	2	1	0	0	0	0	6	1	2	1	0	0	8	4	1	0	0	1	27
25-30	1	1	1	0	0	0	3	5	1	0	0	0	13	5	0	0	1	0	31
≥ 31	2	0	1	0	0	0	4	2	1	0	0	1	7	8	0	0	0	0	26
Total	67	25	18	2	1	1	70	27	13	1	0	4	70	34	5	1	4	1	344

Table 14. Demographic Distribution of Truncated ANSUR Females in Nine Height/Weight Groups

	Height < 33.3%						Height 33.3% to 66.6%						Height > 66.6%						
	W*	B	H	AP	AI	MO	W	B	H	AP	AI	MO	W	B	H	AP	AI	MO	Total
Weight < 33.3%																			
≤ 20	73	69	30	9	3	24	29	35	5	1	1	4	16	19	0	0	0	3	321
21-24	72	68	33	17	3	24	37	45	10	2	2	6	27	19	4	1	0	2	372
25-30	56	67	35	22	2	16	32	34	7	1	1	1	20	11	1	0	0	0	306
≥ 31	62	43	21	16	1	9	31	17	1	0	2	1	8	11	0	1	0	0	224
Weight 33.3% to 66.6%																			
≤ 20	39	32	9	0	1	4	53	41	1	3	0	6	41	40	3	0	0	4	277
21-24	38	38	20	3	2	12	38	44	12	4	1	4	50	37	10	0	1	5	319
25-30	35	50	17	5	1	9	44	55	8	4	3	10	50	39	4	1	0	3	338
≥ 31	28	47	24	11	0	5	37	34	4	3	4	6	28	21	4	1	0	1	258
Weight > 66.6%																			
≤ 20	10	6	1	0	0	1	15	17	1	3	3	2	39	35	2	5	2	3	145
21-24	19	15	3	0	2	1	21	17	2	1	4	4	59	53	9	1	4	12	227
25-30	19	23	10	1	0	2	23	39	15	2	1	5	71	80	6	5	2	11	315
≥ 31	17	29	4	3	0	5	52	43	5	3	1	7	74	84	4	2	1	10	344
Total	468	487	207	87	15	112	412	421	71	27	23	56	483	449	47	17	10	54	3446

*W=White; B=Black; H=Hispanic; AP=Asian/Pacific Islander; AI=American Indian; MO=Mixed/Other

Table 15. Race/Age/Height/Weight Match Weighting Factors for Truncated ANSUR Females in Height/Weight Groups

	White	Black	Hispanic	Asian/Pa Islander	American Indian	Mixed/ Other
Weight < 33.3% and Height < 33.3%						
≤ 20	0.178082	0.057971	0.166667	0.000000	0.000000	0.000000
21-24	0.166667	0.044118	0.090909	0.117647	0.333333	0.000000
25-30	0.107143	0.029851	0.028571	0.000000	0.000000	0.000000
≥ 31	0.112903	0.069767	0.095238	0.000000	0.000000	0.111111
Weight < 33.3% and Height 33.3% to 66.6%						
≤ 20	0.068966	0.000000	0.200000	0.000000	0.000000	0.000000
21-24	0.270270	0.066667	0.300000	0.000000	0.000000	0.000000
25-30	0.125000	0.058824	0.142857	0.000000	0.000000	1.000000
≥ 31	0.193548	0.000000	0.000000	0.000000	0.000000	0.000000
Weight < 33.3% and Height > 66.6%						
≤ 20	0.062500	0.000000	0.000000	0.000000	0.000000	0.000000
21-24	0.111111	0.157895	0.000000	1.000000	0.000000	0.000000
25-30	0.050000	0.090909	0.000000	0.000000	0.000000	0.000000
≥ 31	0.250000	0.090909	0.000000	0.000000	0.000000	0.000000
Weight 33.3% to 66.6% and Height < 33.3%						
≤ 20	0.179487	0.031250	0.222222	0.000000	0.000000	0.000000
21-24	0.184211	0.052632	0.100000	0.000000	0.000000	0.000000
25-30	0.114286	0.060000	0.058824	0.000000	0.000000	0.000000
≥ 31	0.142857	0.085106	0.000000	0.000000	0.000000	0.000000
Weight 33.3% to 66.6% and Height 33.3% to 66.6%						
≤ 20	0.150943	0.097561	2.000000	0.000000	0.000000	0.166667
21-24	0.263158	0.090909	0.000000	0.000000	0.500000	0.250000
25-30	0.068182	0.000000	0.000000	0.000000	0.000000	0.000000
≥ 31	0.108108	0.117647	0.250000	0.000000	0.000000	0.000000
Weight 33.3% to 66.6% and Height > 66.6%						
≤ 20	0.073171	0.075000	0.000000	0.000000	0.000000	0.000000
21-24	0.140000	0.108108	0.100000	0.000000	1.000000	0.000000
25-30	0.080000	0.051282	0.250000	0.000000	0.000000	0.000000
≥ 31	0.250000	0.047619	0.250000	0.000000	0.000000	0.000000

Table 15. (Cont.) Race/Age/Height/Weight Match Weighting Factors for Truncated ANSUR Females in Height/Weight Groups

	White	Black	Hispanic	Asian/Pa Islander	American Indian	Mixed/ Other
Weight > 66.6% and Height < 33.3%						
≤ 20	0.200000	0.166667	0.000000	0.000000	0.000000	0.000000
21-24	0.105263	0.066667	0.000000	0.000000	0.000000	0.000000
25-30	0.052632	0.043478	0.100000	0.000000	0.000000	0.000000
≥ 31	0.117647	0.000000	0.250000	0.000000	0.000000	0.000000
Weight > 66.6% and Height 33.3% to 66.6%						
≤ 20	0.666667	0.117647	1.000000	0.000000	0.000000	0.000000
21-24	0.285714	0.058824	1.000000	1.000000	0.000000	0.000000
25-30	0.130435	0.128205	0.066667	0.000000	0.000000	0.000000
≥ 31	0.076923	0.046512	0.200000	0.000000	0.000000	0.142857
Weight > 66.6% and Height > 66.6%						
≤ 20	0.358974	0.057143	0.500000	0.000000	0.000000	0.000000
21-24	0.135593	0.075472	0.111111	0.000000	0.000000	0.083333
25-30	0.183099	0.062500	0.000000	0.000000	0.500000	0.000000
≥ 31	0.094595	0.095238	0.000000	0.000000	0.000000	0.000000

CHAPTER II

SUMMARY STATISTICS

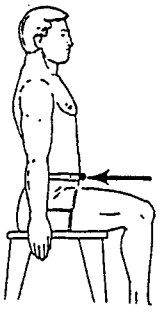
THE LANDMARKS

Dimensions are measured from one point on the body (or a fixed surface such as the floor) to another or, in the case of circumferences, around a part of the body at a specified level. To ensure that each dimension is measured accurately and consistently from subject to subject, dimensions are defined in terms of body landmarks, which serve as the origin, termination or level of measurement of a dimension.

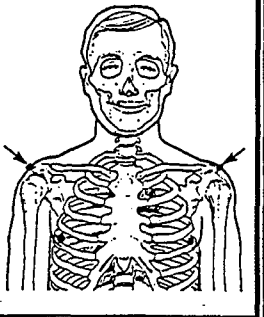
The landmarks used to define the measurements summarized in this report are listed and briefly described on the following pages. Detailed illustrated instructions for locating these landmarks can be found in the Measurer's Handbook: US Army Anthropometric Survey 1987-1988.[9]

Landmark Definitions and Illustrations

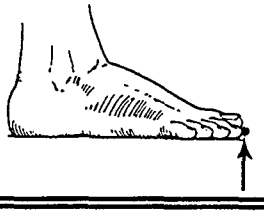
Abdominal point, anterior: The most protruding point of the relaxed abdomen of a seated subject.



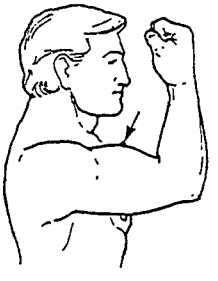
Acromion, right and left: The point of intersection of the lateral border of the acromial process and a line running down the middle of the shoulder from the neck to the tip of the shoulder.

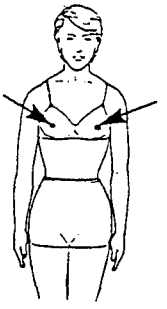
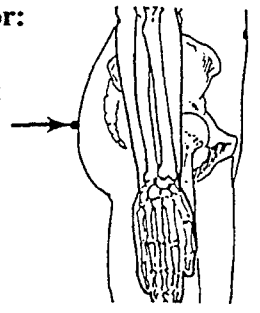
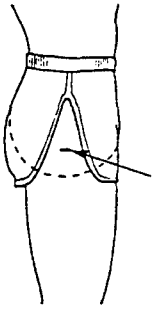
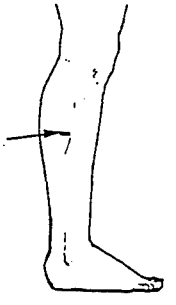
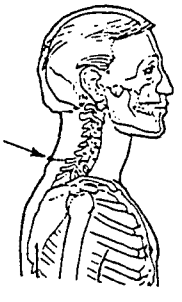
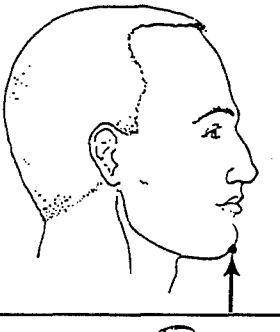
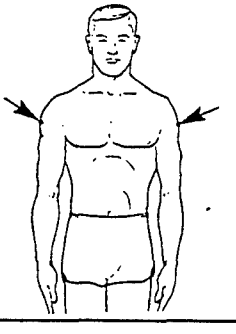
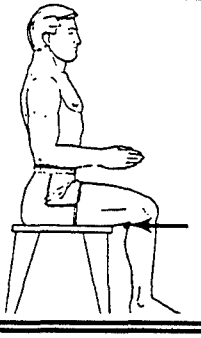
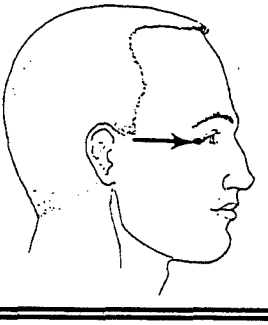


Acropodion: The tip of the first or second toe of the right foot, whichever is longer.

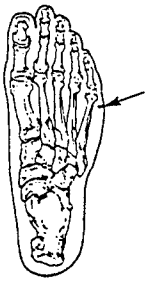


Biceps point: The highest point of the right flexed biceps as viewed from the subject's right side.

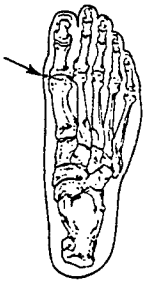


Bustpoint, right and left: The anterior points of the bra cups. 	**Buttock point, posterior:** Point of maximum protrusion of the right buttock of a standing subject. 
Buttock point, lateral: right and left: Points on the thigh or hip at the level of the maximum protrusion of the right buttock. 	**Calf:** A point on the side of the calf at the level of the maximum circumference of the right calf. 
Cervicale: The superior palpable point of the spine of the seventh cervical vertebra. 	**Chin:** The most protruding point on the bottom edge of the chin, along the jawline. 
Dactylion III, right and left: The tip of the middle finger. 	**Deltoid point, right and left:** The lateral point of the right deltoid muscle, and the margin of the left deltoid muscle at the level of the right deltoid point. 
Dorsal juncture of the calf and thigh: The juncture between the right calf and thigh behind the knee of a subject sitting with the knee flexed 90 degrees. 	**Ectocanthus:** The outside corner of the right eye formed by the meeting of the upper and lower eyelids. 

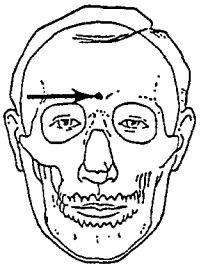
Fifth metatarsophalangeal protrusion: The lateral protrusion of the right foot in the region of the fifth metatarsophalangeal joint.



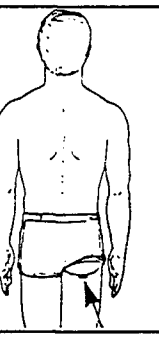
First metatarsophalangeal protrusion: The medial protrusion of the right foot in the region of the first metatarsophalangeal joint.



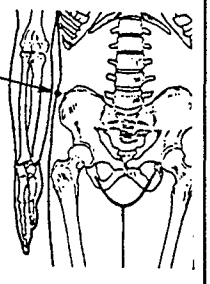
Glabella: The anterior point on the frontal bone midway between the bony brow ridges.



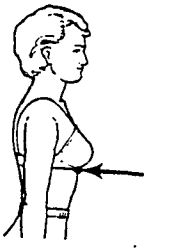
Gluteal furrow point: The lowest point of the lowest furrow or crease at the juncture of the right buttock and the thigh.



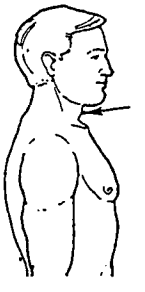
Iliocristale: The highest palpable point of the right iliac crest of the pelvis, one half the distance between the anterior superior iliac and posterior superior iliac spines.



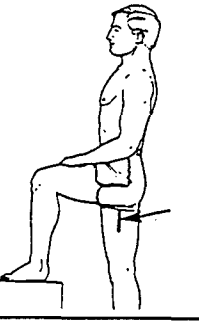
Inferior breast point: The inferior point of the juncture of the lower of the two breasts with the torso.



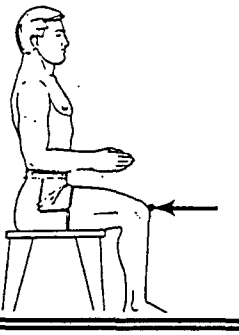
Infrathyroid: The inferior point in the midsagittal plane of the thyroid cartilage (Adam's apple).



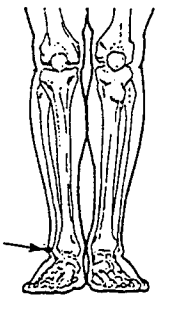
Inner thigh: A vertical line halfway between the front and back of the right inner thigh, and extending downward from the level of the gluteal furrow.

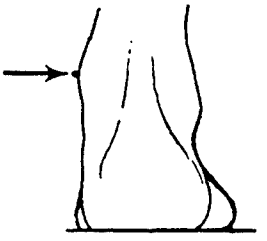
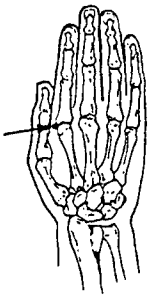
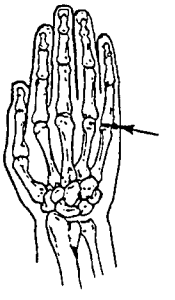
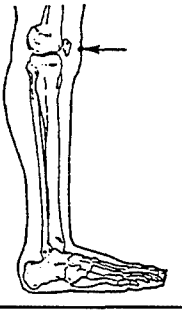
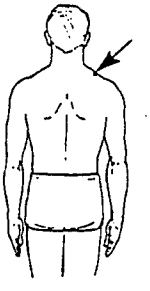
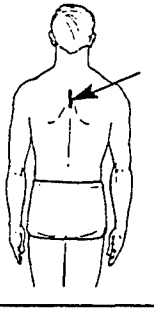
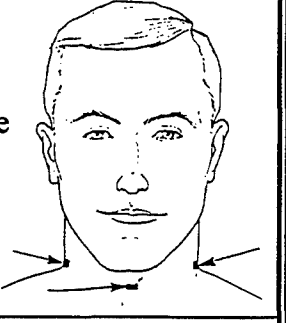
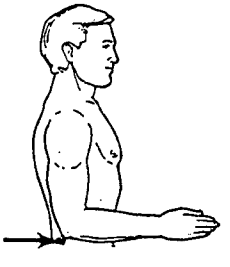
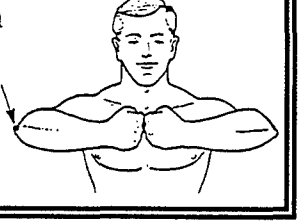


Knee point, anterior: The most protruding point of the right kneecap of a seated subject.

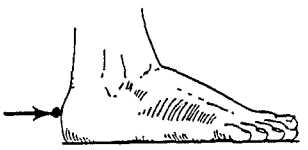


Lateral malleolus: The lateral point of the right lateral malleolus (outside ankle bone).

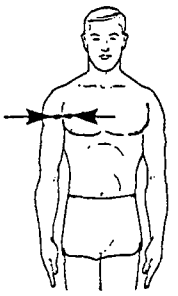


Medial malleolus: The medial point of the right medial malleolus (inside ankle bone). 	**Menton:** The inferior point of the mandible in the midsagittal plane (bottom of the chin). 
Metacarpale II: The lateral point of the right metacarpophalangeal joint II (at the base of the index finger on the outer edge of the hand). 	**Metacarpale V:** The medial point of the right metacarpophalangeal joint V (at the base of the little finger on the outer edge of the hand). 
Midpatella: The anterior point halfway between the top and bottom of the right patella (kneecap). 	**Midshoulder:** The point on the top of the right shoulder midway between the neck (right trapezius point) and the tip of the shoulder (acromion, right). 
Midspine: A line down the center of the back. 	**Neck, anterior, right lateral and left lateral:** Anterior and lateral points at the base of the neck. 
Olecranon, bottom and rear: The lowest and rearmost points of the right elbow with the elbow flexed 90 degrees. 	**Olecranon, center:** A point on the center of the curvature of the right olecranon process with the elbow flexed about 115 degrees. 

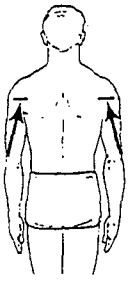
Pternion: The posterior point of the right heel.



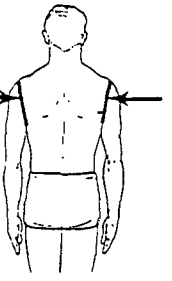
Scye, anterior on upper arm: A short horizontal line on the upper arm originating at the apex of the right anterior axillary fold.



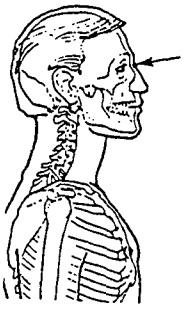
Scye, midscye, right and left: A short horizontal line bisecting the posterior diagonal scye landmark.



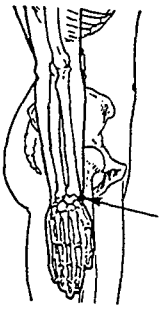
Scye, posterior diagonal, right and left: A diagonal line connecting the apex of the posterior axillary fold with the acromion landmark on the tip of the shoulder.



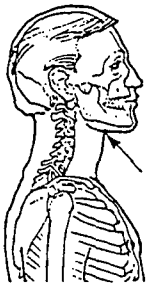
Sellion: The point of the deepest depression of the nasal bones at the top of the nose



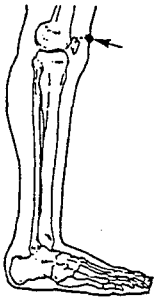
Stylion: The lowest point of the bottom of the right radius.



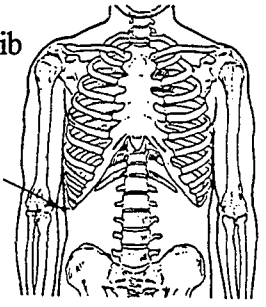
Submandibular: The juncture, in the midsagittal plane, of the lower jaw (mandible) and the neck.



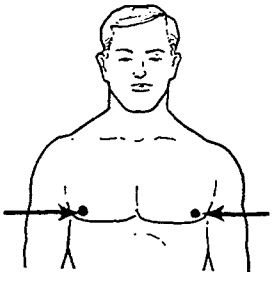
Suprapatella: The superior point of the right patella (kneecap).



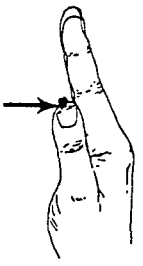
Tenth Rib: The inferior point of the right tenth rib (bottom of the rib cage)



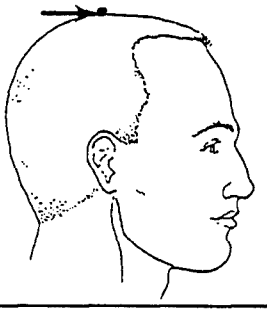
Thelion, right and left: Center of the nipples (on males).



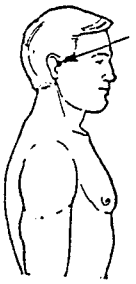
Thumbtip: The tip of the right thumb.



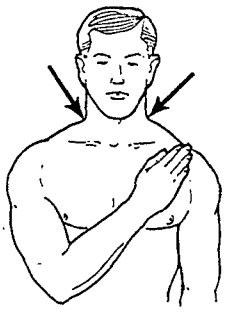
Top of head: The highest point on the head when the head is in the Frankfort plane.



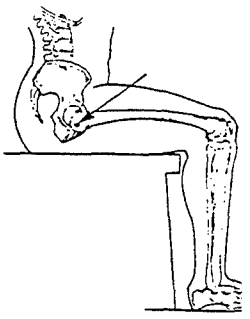
Tragion, right and left: The superior point on the juncture of the cartilaginous flap (tragus) of the ear with the head.



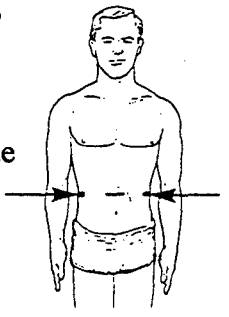
Trapezius point, right and left: The point at which the anterior border of the trapezius muscle crosses the lateral neck landmark.



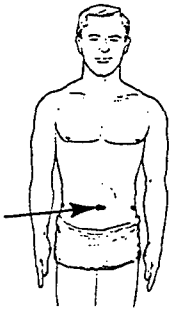
Trochanter: A point at the center of the lateral surface of the greater trochanter of the right femur of a sitting subject.



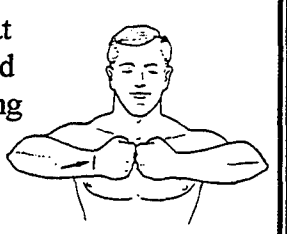
Waist (natural indentation), right, left, anterior, and posterior: Level of the greatest indentation on the right side of the torso, or half the distance between 10th rib and Iliocristale if no single indentation is clear.



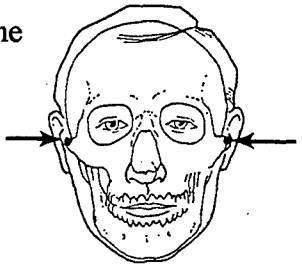
Waist (omphalion), right, left, anterior, and posterior: Level of the center of the navel.



Wrist, dorsal: A line across the back of the right wrist originating at the stylion landmark and perpendicular to the long axis of the arm.



Zygion, right and left: The lateral point on the zygomatic arch.



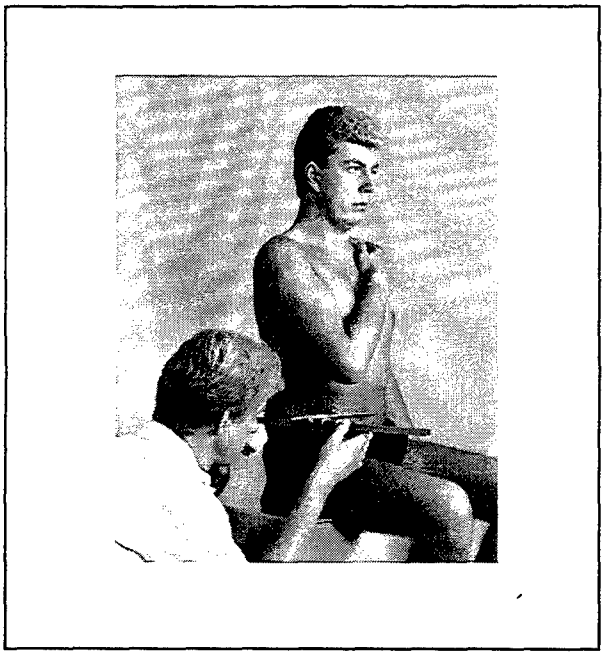
THE SUMMARY STATISTICS

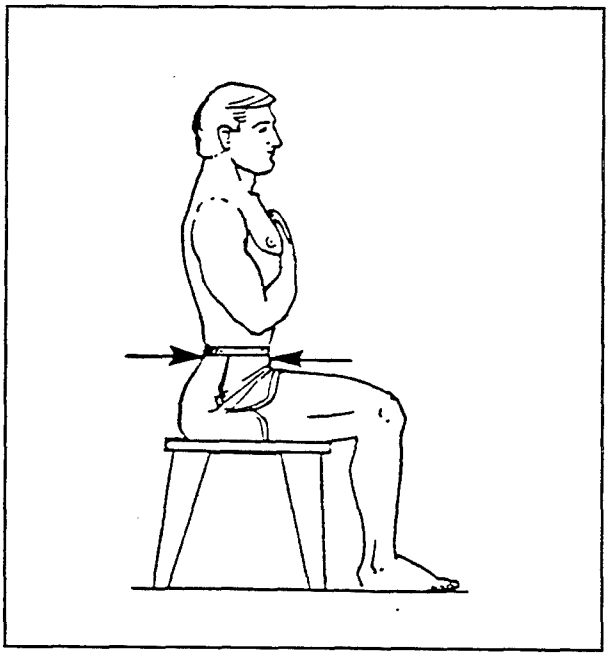
Summary statistics, including means, standard deviations, and percentile values, for the male and female US Marine Corps Anthropometric Databases are presented in the following pages. Each of the summarized dimensions is fully described and illustrated. All of the reported dimensions were directly measured using traditional instruments and standard anthropometric techniques during the 1988 Anthropometric Survey of U.S. Army Personnel. The measurements were taken on the right side of the subject unless otherwise specified or in the rare cases where an injury or anatomical abnormality made it necessary to measure on the left side. Measurements were made to the nearest millimeter, except Weight taken to the nearest 0.1 kilogram.

Detailed instructions for measuring these anthropometric dimensions can be found in the Measurer's Handbook: US Army Anthropometric Survey 1987-1988.[9] Information regarding the survey in general can be found in the 1988 Anthropometric Survey of US Army Personnel: Methods and Summary Statistics.[8]

(1) Abdominal Extension Depth, Sitting

The horizontal distance between the anterior point of the abdomen and the back at the same level is measured with a beam caliper. The subject sits erect looking straight ahead. The measurement is made at the maximum point of quiet respiration.





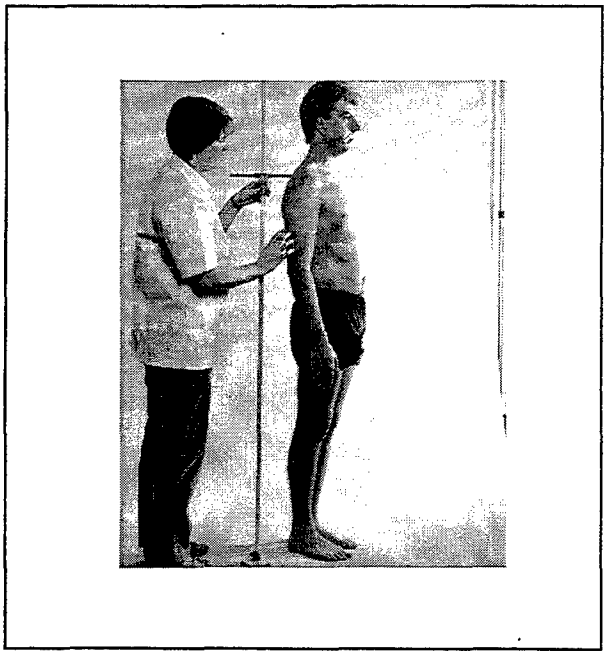
Abdominal Extension Depth, Sitting

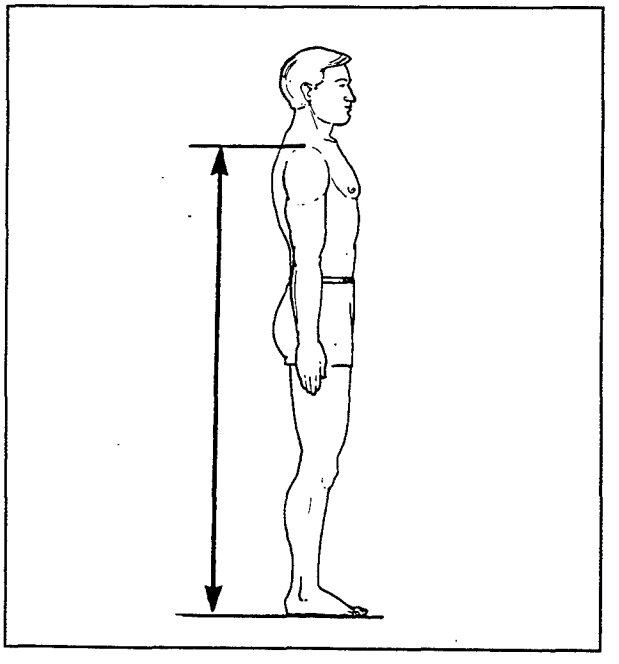
Males		
Millimeters		Inches
239.00	Mean	9.41
1.50	SE(Mean)	0.06
27.70	SD(Mean)	1.09
1.03	SE(SD)	0.04
165.00	Minimum	6.50
436.00	Maximum	17.17
Symmetry-Veta I		5.90
Kurtosis-Veta II		4.90
Coeff. of Variation		11.6%
Sample Size		4445
Percentiles		
Millimeters		Inches
187.60	1st	7.39
192.10	2nd	7.56
195.10	3rd	7.68
199.20	5th	7.84
205.90	10th	8.11
210.90	15th	8.30
215.00	20th	8.46
218.80	25th	8.61
222.40	30th	8.76
225.80	35th	8.89
229.20	40th	9.02
232.50	45th	9.15
236.00	50th	9.29
239.60	55th	9.43
243.30	60th	9.58
247.30	65th	9.74
251.60	70th	9.91
256.40	75th	10.09
261.90	80th	10.31
268.50	85th	10.57
277.00	90th	10.91
289.90	95th	11.41
298.20	97th	11.74
304.30	98th	11.98
313.70	99th	12.35

Females		
Millimeters		Inches
222.00	Mean	8.74
1.40	SE(Mean)	0.06
25.30	SD(Mean)	1.00
0.97	SE(SD)	0.04
153.00	Minimum	6.02
353.00	Maximum	13.90
Symmetry-Veta I		6.60
Kurtosis-Veta II		6.70
Coeff. of Variation		11.4%
Sample Size		2888
Percentiles		
Millimeters		Inches
174.90	1st	6.89
179.20	2nd	7.06
182.00	3rd	7.17
186.00	5th	7.32
192.50	10th	7.58
197.20	15th	7.76
201.00	20th	7.91
204.50	25th	8.05
207.70	30th	8.18
210.70	35th	8.30
213.60	40th	8.41
216.60	45th	8.53
219.60	50th	8.65
222.70	55th	8.77
225.90	60th	8.89
229.30	65th	9.03
233.10	70th	9.18
237.30	75th	9.34
242.20	80th	9.54
248.10	85th	9.77
256.10	90th	10.08
269.00	95th	10.59
278.10	97th	10.95
285.20	98th	11.23
297.10	99th	11.70

(2) Acromial Height

The vertical distance between a standing surface and the acromion landmark on the tip of the right shoulder is measured with an anthropometer. The subject stands erect looking straight ahead. The heels are together with the weight distributed equally on both feet. The shoulders and upper extremities are relaxed. The measurement is made at the maximum point of quiet respiration





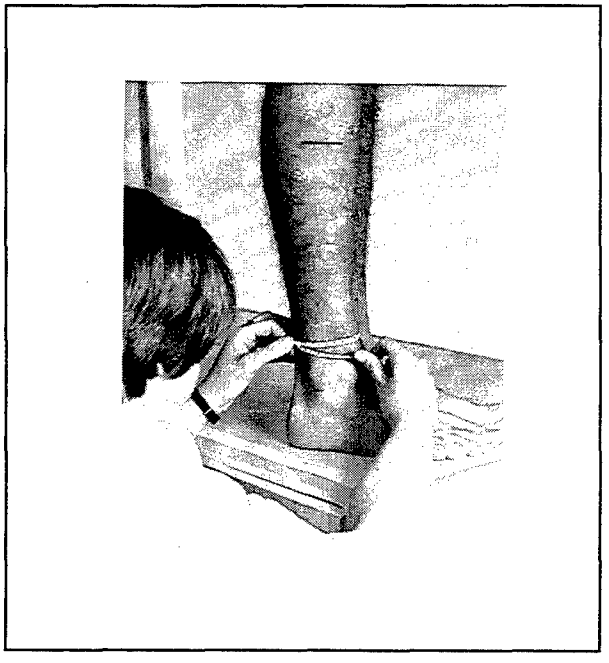
Acromial Height

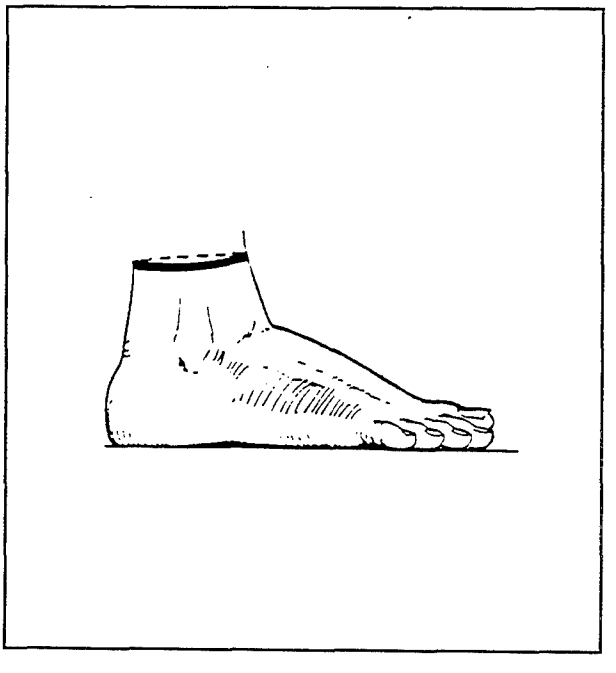
Males		
Millimeters		Inches
1444.00	Mean	56.85
3.20	SE(Mean)	0.13
61.60	SD(Mean)	2.43
2.28	SE(SD)	0.09
1202.00	Minimum	47.32
1648.00	Maximum	64.88
Symmetry-Veta I		0.20
Kurtosis-Veta II		-0.90
Coeff. of Variation		4.3%
Sample Size		4447
Percentiles		
Millimeters		Inches
1302.20	1st	51.27
1318.60	2nd	51.91
1329.20	3rd	52.33
1343.50	5th	52.89
1365.70	10th	53.77
1380.70	15th	54.36
1392.60	20th	54.83
1403.00	25th	55.24
1412.20	30th	55.60
1420.80	35th	55.94
1428.90	40th	56.26
1436.80	45th	56.57
1444.60	50th	56.87
1452.40	55th	57.18
1460.30	60th	57.49
1468.50	65th	57.81
1477.10	70th	58.15
1486.50	75th	58.52
1497.10	80th	58.94
1509.30	85th	59.42
1524.90	90th	60.04
1548.10	95th	60.95
1563.40	97th	61.55
1574.70	98th	62.00
1592.70	99th	62.70

Females		
Millimeters		Inches
1334.00	Mean	52.52
3.00	SE(Mean)	0.12
56.30	SD(Mean)	2.22
2.15	SE(SD)	0.08
1166.00	Minimum	45.91
1543.00	Maximum	60.75
Symmetry-Veta I		0.80
Kurtosis-Veta II		-0.50
Coeff. of Variation		4.2%
Sample Size		2888
Percentiles		
Millimeters		Inches
1202.50	1st	47.34
1219.50	2nd	48.01
1229.80	3rd	48.42
1243.30	5th	48.95
1263.50	10th	49.74
1276.80	15th	50.27
1287.30	20th	50.68
1296.40	25th	51.04
1304.50	30th	51.36
1312.00	35th	51.65
1319.20	40th	51.94
1326.20	45th	52.21
1333.20	50th	52.49
1340.30	55th	52.77
1347.50	60th	53.05
1355.00	65th	53.35
1363.00	70th	53.66
1371.80	75th	54.01
1381.70	80th	54.40
1393.30	85th	54.85
1408.10	90th	55.44
1430.30	95th	56.31
1444.80	97th	56.88
1455.40	98th	57.30
1471.90	99th	57.95

(3) Ankle Circumference

The minimum horizontal circumference of the right ankle is measured with a tape. The subject stands with the feet about 10 cm apart and the weight distributed equally on both feet





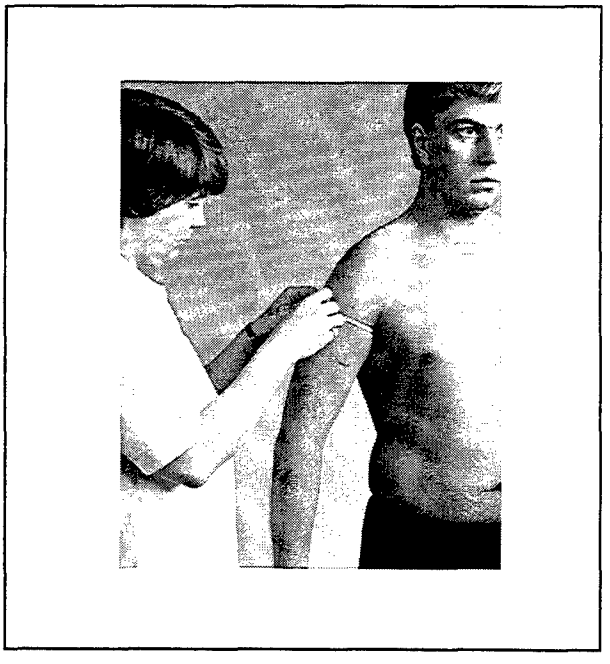
Ankle Circumference

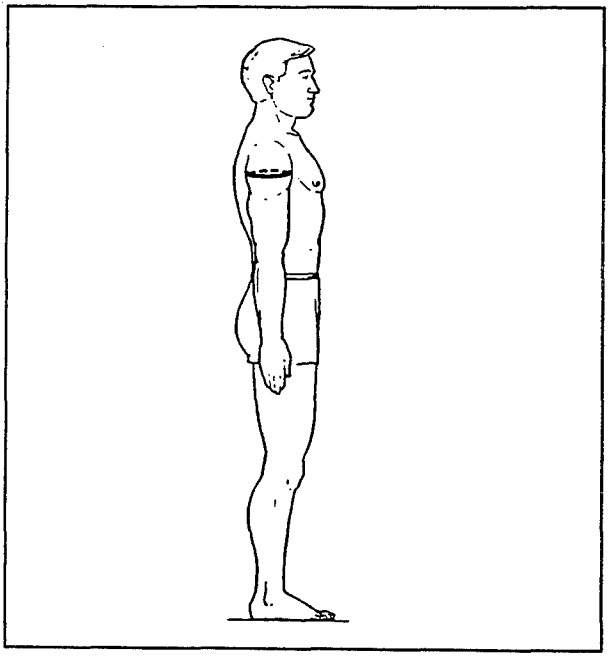
Males		
Millimeters		Inches
223.00	Mean	8.78
0.70	SE(Mean)	0.03
12.90	SD(Mean)	0.51
0.48	SE(SD)	0.02
177.00	Minimum	6.97
267.00	Maximum	10.51
Symmetry-Veta I		0.70
Kurtosis-Veta II		0.10
Coeff. of Variation		5.8%
Sample Size		4431
Percentiles		
Millimeters		Inches
194.60	1st	7.66
197.50	2nd	7.78
199.50	3rd	7.85
202.20	5th	7.96
206.70	10th	8.14
209.80	15th	8.26
212.30	20th	8.36
214.40	25th	8.44
216.40	30th	8.52
218.10	35th	8.59
219.80	40th	8.65
221.50	45th	8.72
223.10	50th	8.78
224.80	55th	8.85
226.40	60th	8.91
228.10	65th	8.98
229.90	70th	9.05
231.90	75th	9.13
234.10	80th	9.22
236.60	85th	9.31
239.90	90th	9.44
244.90	95th	9.64
248.20	97th	9.77
250.80	98th	9.87
254.90	99th	10.04

Females		
Millimeters		Inches
206.00	Mean	8.11
0.60	SE(Mean)	0.02
12.00	SD(Mean)	0.47
0.46	SE(SD)	0.02
159.00	Minimum	6.26
261.00	Maximum	10.28
Symmetry-Veta I		1.40
Kurtosis-Veta II		1.60
Coeff. of Variation		5.8%
Sample Size		2881
Percentiles		
Millimeters		Inches
180.50	1st	7.11
182.80	2nd	7.20
184.50	3rd	7.26
186.90	5th	7.36
191.00	10th	7.52
193.90	15th	7.63
196.30	20th	7.73
198.30	25th	7.81
200.10	30th	7.88
201.70	35th	7.94
203.30	40th	8.00
204.80	45th	8.06
206.30	50th	8.12
207.80	55th	8.18
209.30	60th	8.24
210.90	65th	8.30
212.50	70th	8.37
214.30	75th	8.44
216.30	80th	8.52
218.70	85th	8.61
221.70	90th	8.73
226.60	95th	8.92
230.10	97th	9.06
232.90	98th	9.17
237.70	99th	9.36

(4) Axillary Arm Circumference

The circumference of the right upper arm perpendicular to its long axis at the level of the anterior-scye-on-the-upper arm landmark is measured with a tape. The subject stands erect looking straight ahead with shoulders and upper extremities relaxed and the palms facing the sides.





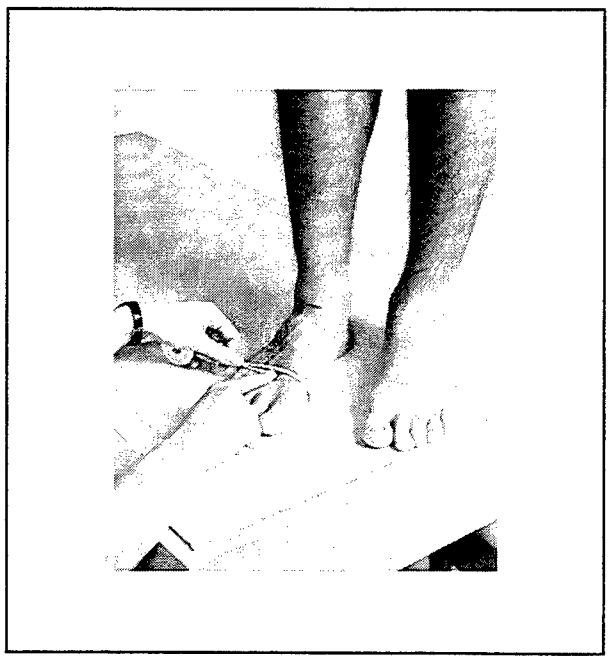
Axillary Arm Circumference

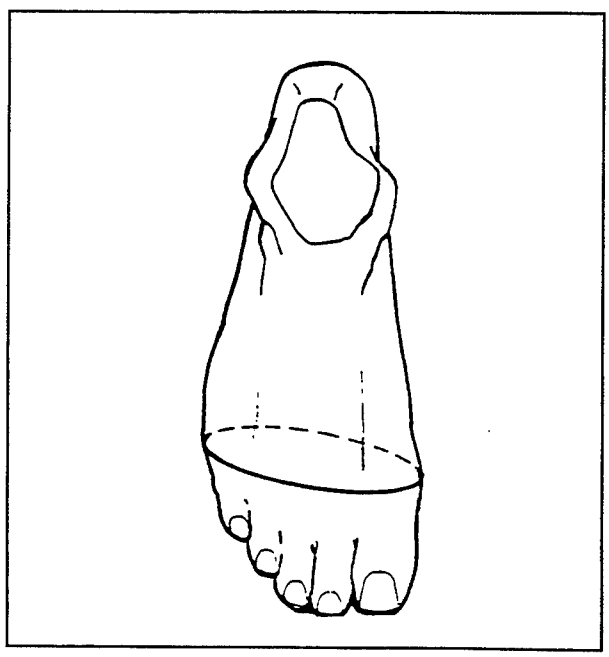
Males		
Millimeters		Inches
336.00	Mean	13.23
1.40	SE(Mean)	0.06
26.00	SD(Mean)	1.02
0.96	SE(SD)	0.04
245.00	Minimum	9.65
477.00	Maximum	18.78
Symmetry-Veta I		2.10
Kurtosis-Veta II		3.10
Coeff. of Variation		7.7%
Sample Size		4447
Percentiles		
Millimeters		Inches
279.60	1st	11.01
285.20	2nd	11.23
289.10	3rd	11.38
294.70	5th	11.60
303.80	10th	11.96
310.10	15th	12.21
315.10	20th	12.41
319.40	25th	12.57
323.30	30th	12.73
326.90	35th	12.87
330.20	40th	13.00
333.50	45th	13.13
336.60	50th	13.25
339.80	55th	13.38
343.00	60th	13.50
346.40	65th	13.64
349.90	70th	13.78
353.70	75th	13.93
358.00	80th	14.09
363.20	85th	14.30
369.90	90th	14.56
380.70	95th	14.99
388.40	97th	15.29
394.50	98th	15.53
405.20	99th	15.95

Females		
Millimeters		Inches
292.00	Mean	11.50
1.30	SE(Mean)	0.05
23.80	SD(Mean)	0.94
0.91	SE(SD)	0.04
225.00	Minimum	8.86
377.00	Maximum	14.84
Symmetry-Veta I		3.50
Kurtosis-Veta II		2.20
Coeff. of Variation		8.2%
Sample Size		2888
Percentiles		
Millimeters		Inches
242.80	1st	9.56
247.80	2nd	9.76
251.20	3rd	9.89
255.80	5th	10.07
263.30	10th	10.37
268.50	15th	10.57
272.60	20th	10.73
276.30	25th	10.88
279.60	30th	11.01
282.70	35th	11.13
285.70	40th	11.25
288.60	45th	11.36
291.60	50th	11.48
294.50	55th	11.59
297.60	60th	11.72
300.80	65th	11.84
304.20	70th	11.98
308.00	75th	12.13
312.40	80th	12.30
317.60	85th	12.50
324.50	90th	12.78
335.40	95th	13.20
343.00	97th	13.50
349.00	98th	13.74
358.90	99th	14.13

(5) Ball of Foot Circumference

The circumference of the foot at the first and fifth metatarsophalangeal landmarks on the ball of the right foot is measured with a tape. The subject stands with the feet about 10 centimeters apart and the weight distributed equally on both feet.





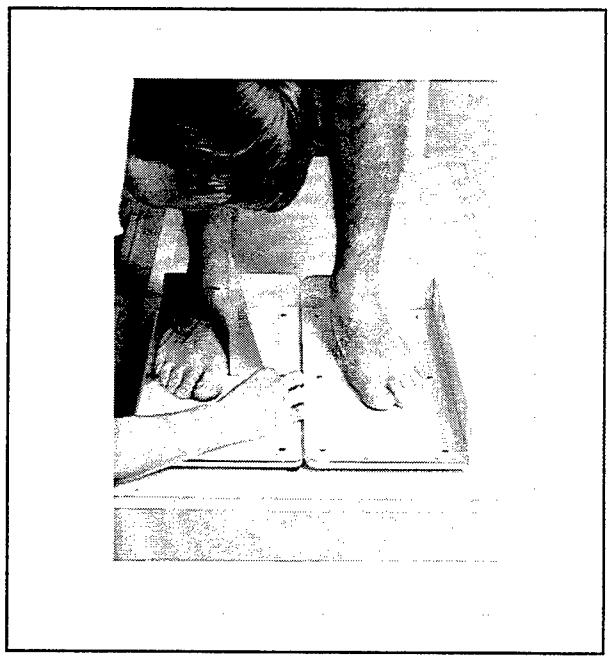
Ball of Foot Circumference

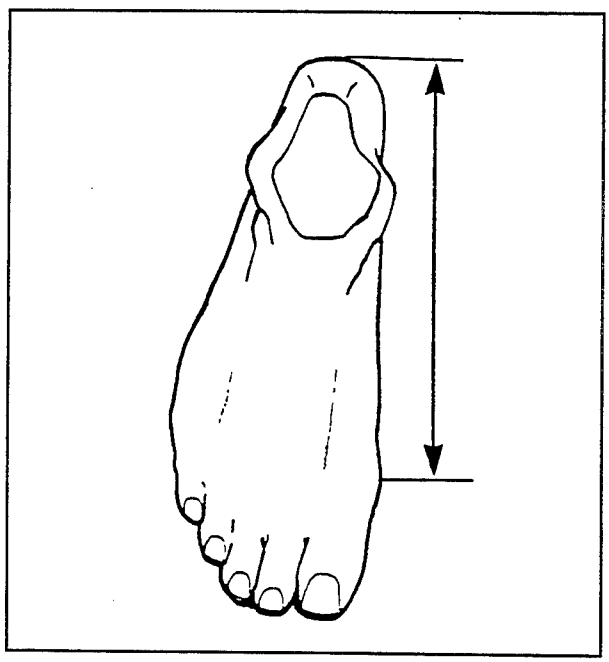
Males		
Millimeters		Inches
249.00	Mean	9.80
0.60	SE(Mean)	0.02
12.20	SD(Mean)	0.48
0.45	SE(SD)	0.02
210.00	Minimum	8.27
300.00	Maximum	11.81
Symmetry-Veta I		1.80
Kurtosis-Veta II		2.30
Coeff. of Variation		4.9%
Sample Size		4431
Percentiles		
Millimeters		Inches
221.80	1st	8.73
225.10	2nd	8.86
227.10	3rd	8.94
229.90	5th	9.05
234.20	10th	9.22
237.10	15th	9.33
239.40	20th	9.43
241.40	25th	9.50
243.10	30th	9.57
244.70	35th	9.63
246.30	40th	9.70
247.80	45th	9.76
249.30	50th	9.81
250.70	55th	9.87
252.30	60th	9.93
253.80	65th	9.99
255.50	70th	10.06
257.30	75th	10.13
259.40	80th	10.21
261.90	85th	10.31
265.10	90th	10.44
270.10	95th	10.63
273.50	97th	10.77
276.20	98th	10.87
280.60	99th	11.05

Females		
Millimeters		Inches
223.00	Mean	8.78
0.60	SE(Mean)	0.02
11.00	SD(Mean)	0.43
0.42	SE(SD)	0.02
186.00	Minimum	7.32
262.00	Maximum	10.31
Symmetry-Veta I		0.60
Kurtosis-Veta II		0.40
Coeff. of Variation		4.9%
Sample Size		2880
Percentiles		
Millimeters		Inches
197.90	1st	7.79
200.80	2nd	7.91
202.70	3rd	7.98
205.40	5th	8.09
209.40	10th	8.24
212.10	15th	8.35
214.30	20th	8.44
216.10	25th	8.51
217.80	30th	8.57
219.30	35th	8.63
220.70	40th	8.69
222.10	45th	8.74
223.50	50th	8.80
224.90	55th	8.85
226.30	60th	8.91
227.80	65th	8.97
229.30	70th	9.03
231.00	75th	9.09
232.90	80th	9.17
235.10	85th	9.26
237.90	90th	9.37
242.30	95th	9.54
245.30	97th	9.66
247.50	98th	9.74
251.20	99th	9.89

(6) Ball of Foot Length

The distance from the back of the heel to the landmark at the first metatarsophalangeal protrusion on the ball of the right foot is measured in a footbox. The subject stands erect with each foot in a footbox. The weight is distributed equally on both feet. The medial side of the right foot is parallel with the long axis of the box.





Ball of Foot Length

Males		
Millimeters		Inches
195.00	Mean	7.68
0.50	SE(Mean)	0.02
10.20	SD(Mean)	0.40
0.38	SE(SD)	0.01
163.00	Minimum	6.42
237.00	Maximum	9.33
Symmetry-Veta I		1.10
Kurtosis-Veta II		-0.40
Coeff. of Variation		5.2%
Sample Size		4433

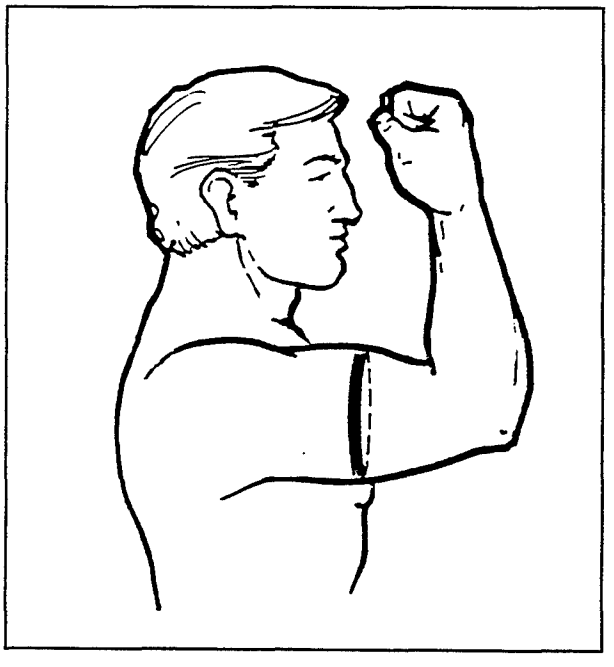
Percentiles		
Millimeters		Inches
172.60	1st	6.80
175.20	2nd	6.90
176.90	3rd	6.96
179.20	5th	7.06
182.80	10th	7.20
185.20	15th	7.29
187.10	20th	7.37
188.80	25th	7.43
190.30	30th	7.49
191.70	35th	7.55
193.00	40th	7.60
194.30	45th	7.65
195.60	50th	7.70
196.90	55th	7.75
198.20	60th	7.80
199.60	65th	7.86
201.10	70th	7.92
202.70	75th	7.98
204.50	80th	8.05
206.50	85th	8.13
209.20	90th	8.24
213.20	95th	8.39
215.80	97th	8.50
217.80	98th	8.57
220.80	99th	8.69

Females		
Millimeters		Inches
178.00	Mean	7.01
0.50	SE(Mean)	0.02
9.30	SD(Mean)	0.37
0.36	SE(SD)	0.01
148.00	Minimum	5.83
212.00	Maximum	8.35
Symmetry-Veta I		0.40
Kurtosis-Veta II		-1.70
Coeff. of Variation		5.2%
Sample Size		2879

Percentiles		
Millimeters		Inches
158.10	1st	6.22
160.20	2nd	6.31
161.60	3rd	6.36
163.60	5th	6.44
166.80	10th	6.57
169.10	15th	6.66
170.90	20th	6.73
172.50	25th	6.79
173.90	30th	6.85
175.30	35th	6.90
176.50	40th	6.95
177.70	45th	7.00
178.90	50th	7.04
180.10	55th	7.09
181.30	60th	7.14
182.60	65th	7.19
183.90	70th	7.24
185.30	75th	7.30
186.80	80th	7.35
188.60	85th	7.43
190.90	90th	7.52
194.30	95th	7.65
196.60	97th	7.74
198.30	98th	7.81
201.10	99th	7.92

(7) Biceps Circumference, Flexed

The circumference of the right upper arm around the flexed biceps muscle is measured with a tape held perpendicular to the long axis of the upper arm. The subject stands with the upper arm extended horizontally and the elbow flexed 90 degrees. The fist is clenched and held facing the head, and the subject exerts maximum effort in "making a muscle."



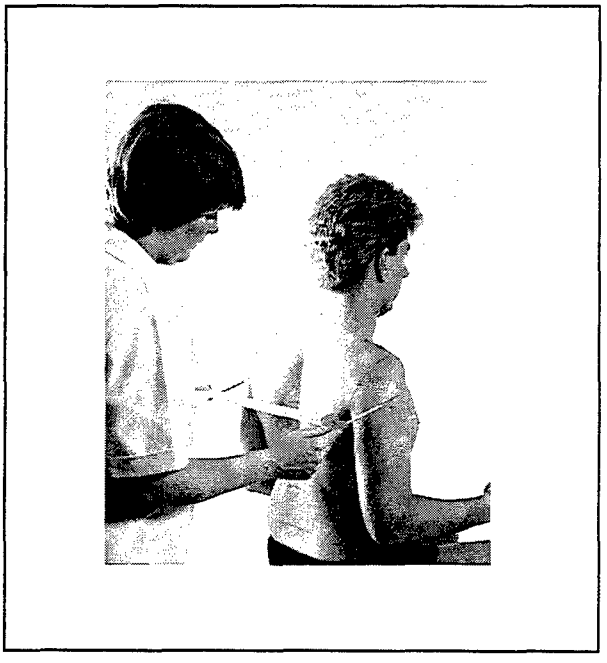
Biceps Circumference, Flexed

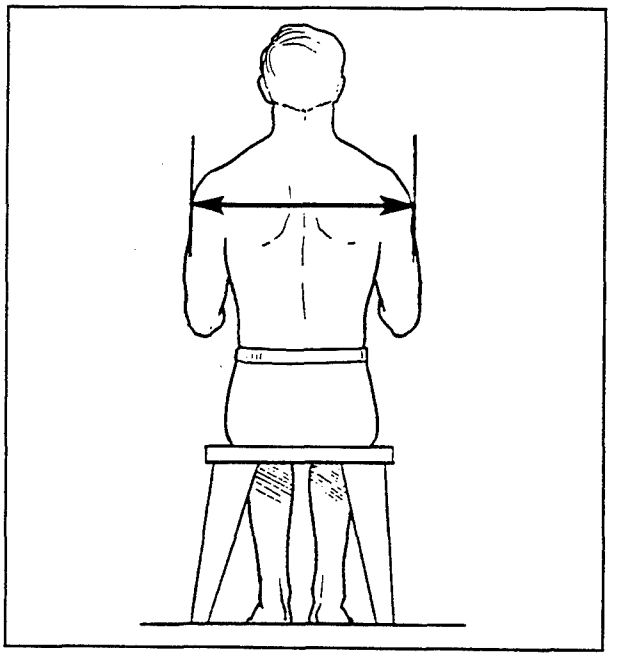
Males		
Millimeters		Inches
337.00	Mean	13.27
1.40	SE(Mean)	0.06
26.00	SD(Mean)	1.02
0.96	SE(SD)	0.04
259.00	Minimum	10.20
459.00	Maximum	18.07
Symmetry-Veta I		2.80
Kurtosis-Veta II		3.60
Coeff. of Variation		7.7%
Sample Size		4447
Percentiles		
Millimeters		Inches
278.50	1st	10.96
286.00	2nd	11.26
290.60	3rd	11.44
296.70	5th	11.68
305.80	10th	12.04
311.80	15th	12.28
316.50	20th	12.46
320.50	25th	12.62
324.10	30th	12.76
327.50	35th	12.89
330.60	40th	13.02
333.70	45th	13.14
336.80	50th	13.26
340.00	55th	13.39
343.20	60th	13.51
346.50	65th	13.64
350.10	70th	13.78
354.20	75th	13.94
358.80	80th	14.13
364.30	85th	14.34
371.70	90th	14.63
383.40	95th	15.09
391.70	97th	15.42
398.20	98th	15.68
409.10	99th	16.11

Females		
Millimeters		Inches
280.00	Mean	11.02
1.20	SE(Mean)	0.05
22.10	SD(Mean)	0.87
0.84	SE(SD)	0.03
215.00	Minimum	8.46
371.00	Maximum	14.61
Symmetry-Veta I		3.40
Kurtosis-Veta II		2.70
Coeff. of Variation		7.9%
Sample Size		2888
Percentiles		
Millimeters		Inches
233.20	1st	9.18
238.30	2nd	9.38
241.70	3rd	9.52
246.30	5th	9.70
253.50	10th	9.98
258.50	15th	10.18
262.40	20th	10.33
265.80	25th	10.46
268.90	30th	10.59
271.80	35th	10.70
274.50	40th	10.81
277.20	45th	10.91
279.90	50th	11.02
282.60	55th	11.13
285.30	60th	11.23
288.30	65th	11.35
291.40	70th	11.47
294.80	75th	11.61
298.80	80th	11.76
303.60	85th	11.95
309.90	90th	12.20
319.90	95th	12.59
327.00	97th	12.87
332.50	98th	13.09
341.80	99th	13.46

(8) Bideltoid Breadth

The maximum horizontal distance between the lateral margins of the upper arms on the deltoid muscles is measured with a beam caliper. The subject sits erect looking straight ahead. The shoulders and upper arms are relaxed and the forearms and hands are extended forward horizontally with the palms facing each other. The measurement is made at the maximum point of quiet respiration.





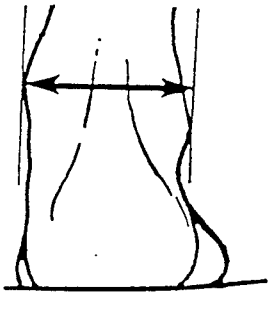
Bideltoid Breadth

Males		
Millimeters		Inches
493.00	Mean	19.41
1.30	SE(Mean)	0.05
25.40	SD(Mean)	1.00
0.94	SE(SD)	0.04
410.00	Minimum	16.14
593.00	Maximum	23.35
Symmetry-Veta I		1.40
Kurtosis-Veta II		1.60
Coeff. of Variation		5.2%
Sample Size		4445
Percentiles		
Millimeters		Inches
435.90	1st	17.16
441.90	2nd	17.40
445.90	3rd	17.56
451.70	5th	17.78
460.80	10th	18.14
467.10	15th	18.39
472.10	20th	18.59
476.40	25th	18.76
480.20	30th	18.91
483.70	35th	19.04
487.00	40th	19.17
490.20	45th	19.30
493.30	50th	19.42
496.40	55th	19.54
499.60	60th	19.67
502.80	65th	19.80
506.20	70th	19.93
510.00	75th	20.08
514.20	80th	20.24
519.10	85th	20.44
525.60	90th	20.69
535.70	95th	21.09
542.90	97th	21.37
548.60	98th	21.60
558.20	99th	21.98

Females		
Millimeters		Inches
433.00	Mean	17.05
1.20	SE(Mean)	0.05
22.50	SD(Mean)	0.89
0.86	SE(SD)	0.03
368.00	Minimum	14.49
532.00	Maximum	20.94
Symmetry-Veta I		2.40
Kurtosis-Veta II		2.30
Coeff. of Variation		5.2%
Sample Size		2888
Percentiles		
Millimeters		Inches
382.50	1st	15.06
388.80	2nd	15.31
392.70	3rd	15.46
397.80	5th	15.66
405.50	10th	15.96
410.70	15th	16.17
414.70	20th	16.33
418.20	25th	16.46
421.40	30th	16.59
424.30	35th	16.70
427.10	40th	16.81
429.90	45th	16.93
432.60	50th	17.03
435.40	55th	17.14
438.30	60th	17.26
441.30	65th	17.37
444.50	70th	17.50
448.00	75th	17.64
452.10	80th	17.80
456.90	85th	17.99
463.20	90th	18.24
472.90	95th	18.62
479.40	97th	18.87
484.40	98th	19.07
492.40	99th	19.39

(9) Bimalleolar Breadth

The horizontal distance between the maximum protrusions of the ankle bones (lateral and medial malleoli) of the right foot is measured with a Holtain caliper. The subject stands with the weight equally distributed on both feet.



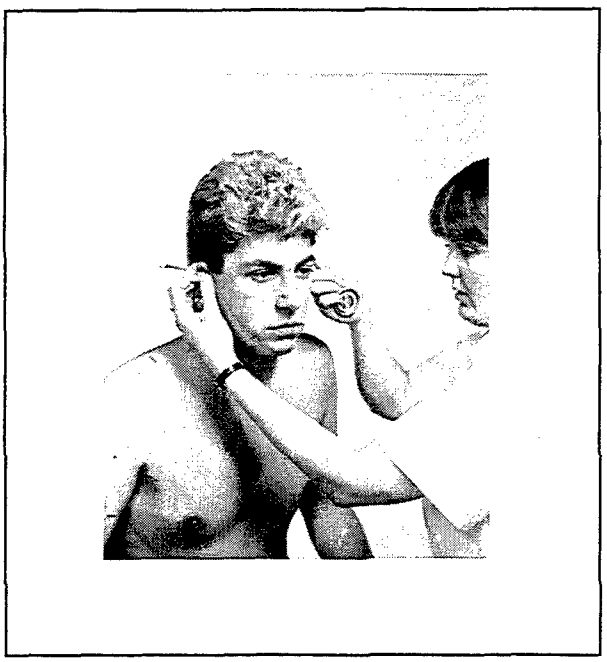
Bimalleolar Breadth

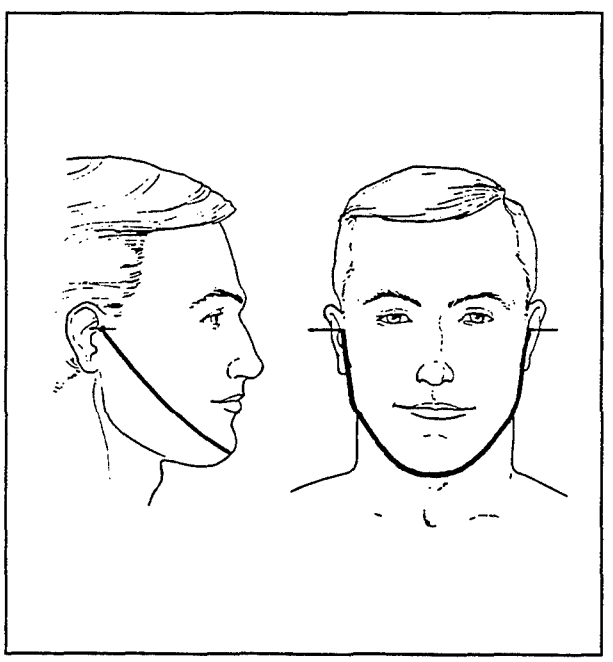
Males		
Millimeters		Inches
73.00	Mean	2.87
0.20	SE(Mean)	0.01
3.80	SD(Mean)	0.15
0.14	SE(SD)	0.01
60.00	Minimum	2.36
89.00	Maximum	3.50
Symmetry-Veta I		0.70
Kurtosis-Veta II		-0.30
Coeff. of Variation		5.2%
Sample Size		4445
Percentiles		
Millimeters		Inches
64.00	1st	2.52
65.20	2nd	2.57
65.90	3rd	2.59
66.80	5th	2.63
68.10	10th	2.68
69.00	15th	2.72
69.80	20th	2.75
70.40	25th	2.77
70.90	30th	2.79
71.40	35th	2.81
71.90	40th	2.83
72.40	45th	2.85
72.90	50th	2.87
73.40	55th	2.89
73.90	60th	2.91
74.50	65th	2.93
75.00	70th	2.95
75.60	75th	2.98
76.30	80th	3.00
77.10	85th	3.04
78.10	90th	3.07
79.50	95th	3.13
80.40	97th	3.17
81.00	98th	3.19
81.90	99th	3.22

Females		
Millimeters		Inches
64.00	Mean	2.52
0.20	SE(Mean)	0.01
3.10	SD(Mean)	0.12
0.12	SE(SD)	0.00
54.00	Minimum	2.13
76.00	Maximum	2.99
Symmetry-Veta I		0.70
Kurtosis-Veta II		1.60
Coeff. of Variation		4.8%
Sample Size		2886
Percentiles		
Millimeters		Inches
57.20	1st	2.25
58.10	2nd	2.29
58.70	3rd	2.31
59.40	5th	2.34
60.50	10th	2.38
61.30	15th	2.41
61.90	20th	2.44
62.40	25th	2.46
62.80	30th	2.47
63.20	35th	2.49
63.60	40th	2.50
64.00	45th	2.52
64.40	50th	2.54
64.80	55th	2.55
65.20	60th	2.57
65.60	65th	2.58
66.00	70th	2.60
66.50	75th	2.62
67.00	80th	2.64
67.60	85th	2.66
68.40	90th	2.69
69.60	95th	2.74
70.40	97th	2.77
71.00	98th	2.80
72.00	99th	2.83

(10) Bitragion Chin Arc

The surface distance between the right and left tragion landmarks across the chin landmark at the tip of the chin is measured with a tape. The teeth are lightly occluded.





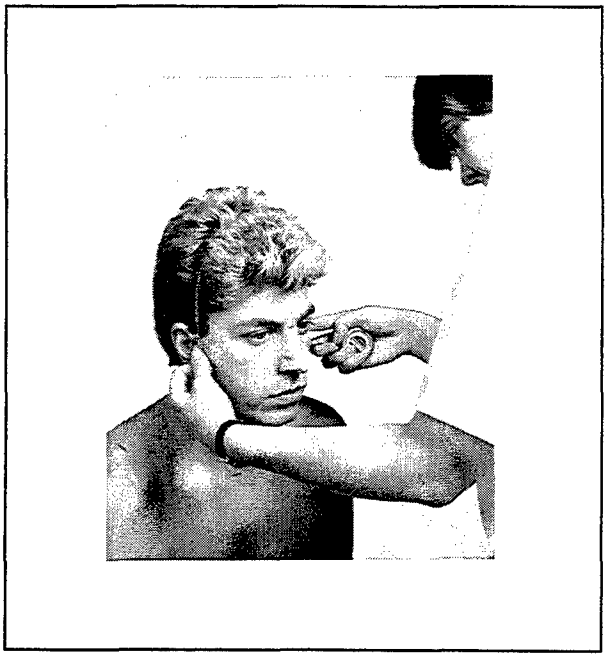
Bitragion Chin Arc

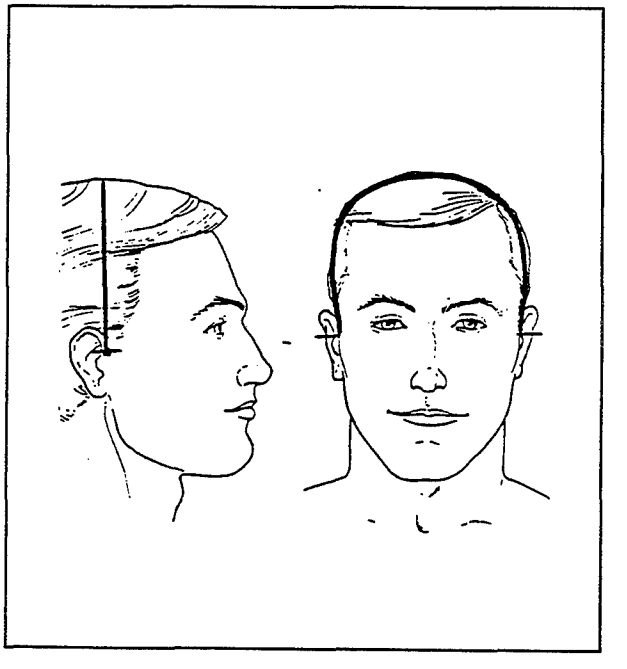
Males		
Millimeters		Inches
325.00	Mean	12.80
0.70	SE(Mean)	0.03
13.10	SD(Mean)	0.52
0.48	SE(SD)	0.02
278.00	Minimum	10.94
385.00	Maximum	15.16
Symmetry-Veta I		0.40
Kurtosis-Veta II		2.00
Coeff. of Variation		4.0%
Sample Size		4444
Percentiles		
Millimeters		Inches
295.30	1st	11.63
298.80	2nd	11.76
301.00	3rd	11.85
304.10	5th	11.97
308.90	10th	12.16
312.10	15th	12.29
314.60	20th	12.39
316.80	25th	12.47
318.70	30th	12.55
320.50	35th	12.62
322.20	40th	12.69
323.80	45th	12.75
325.40	50th	12.81
327.00	55th	12.87
328.60	60th	12.94
330.30	65th	13.00
332.10	70th	13.07
334.00	75th	13.15
336.10	80th	13.23
338.70	85th	13.33
342.00	90th	13.46
347.00	95th	13.66
350.50	97th	13.80
353.20	98th	13.91
357.60	99th	14.08

Females		
Millimeters		Inches
301.00	Mean	11.85
0.70	SE(Mean)	0.03
12.80	SD(Mean)	0.50
0.49	SE(SD)	0.02
261.00	Minimum	10.28
350.00	Maximum	13.78
Symmetry-Veta I		2.00
Kurtosis-Veta II		-0.30
Coeff. of Variation		4.2%
Sample Size		2888
Percentiles		
Millimeters		Inches
273.60	1st	10.77
276.50	2nd	10.89
278.40	3rd	10.96
281.00	5th	11.06
285.20	10th	11.23
288.10	15th	11.34
290.40	20th	11.43
292.50	25th	11.52
294.30	30th	11.59
296.10	35th	11.66
297.70	40th	11.72
299.40	45th	11.79
301.00	50th	11.85
302.70	55th	11.92
304.40	60th	11.98
306.20	65th	12.06
308.00	70th	12.13
310.10	75th	12.21
312.40	80th	12.30
315.10	85th	12.41
318.50	90th	12.54
323.50	95th	12.74
326.70	97th	12.86
329.00	98th	12.95
332.60	99th	13.09

(11) Bitragion Coronal Arc

The surface distance between the right and left tragion landmarks across the top of the head is measured with a tape. The head is in the Frankfort plane.





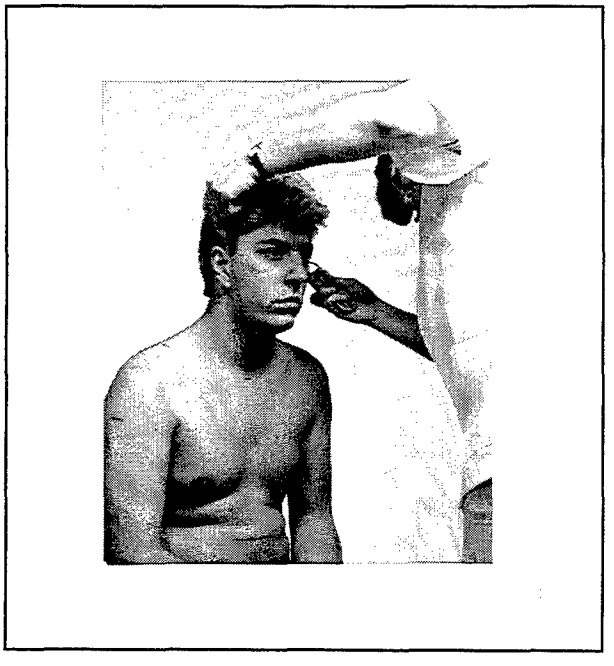
Bitragion Coronal Arc

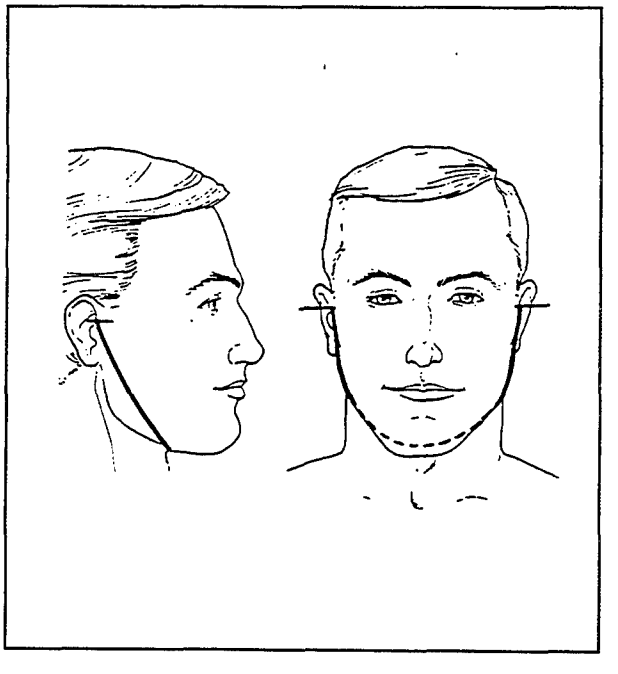
Males		
Millimeters		Inches
354.00	Mean	13.94
0.70	SE(Mean)	0.03
12.90	SD(Mean)	0.51
0.48	SE(SD)	0.02
299.00	Minimum	11.77
412.00	Maximum	16.22
Symmetry-Veta I		1.40
Kurtosis-Veta II		3.30
Coeff. of Variation		3.6%
Sample Size		4444
Percentiles		
Millimeters		Inches
324.00	1st	12.76
327.90	2nd	12.91
330.30	3rd	13.00
333.50	5th	13.13
338.30	10th	13.32
341.40	15th	13.44
343.90	20th	13.54
346.00	25th	13.62
347.90	30th	13.70
349.60	35th	13.76
351.20	40th	13.83
352.80	45th	13.89
354.30	50th	13.95
355.90	55th	14.01
357.50	60th	14.07
359.10	65th	14.14
360.90	70th	14.21
362.80	75th	14.28
365.00	80th	14.37
367.50	85th	14.47
370.90	90th	14.60
376.30	95th	14.81
380.00	97th	14.96
382.80	98th	15.07
387.60	99th	15.26

Females		
Millimeters		Inches
336.00	Mean	13.23
0.70	SE(Mean)	0.03
12.40	SD(Mean)	0.49
0.47	SE(SD)	0.02
298.00	Minimum	11.73
392.00	Maximum	15.43
Symmetry-Veta I		1.20
Kurtosis-Veta II		2.40
Coeff. of Variation		3.7%
Sample Size		2888
Percentiles		
Millimeters		Inches
308.20	1st	12.13
311.60	2nd	12.27
313.80	3rd	12.35
316.70	5th	12.47
321.20	10th	12.65
324.30	15th	12.77
326.70	20th	12.86
328.70	25th	12.94
330.50	30th	13.01
332.20	35th	13.08
333.80	40th	13.14
335.40	45th	13.20
336.90	50th	13.26
338.50	55th	13.33
340.00	60th	13.39
341.60	65th	13.45
343.40	70th	13.52
345.20	75th	13.59
347.30	80th	13.67
349.80	85th	13.77
353.00	90th	13.90
357.90	95th	14.09
361.20	97th	14.22
363.70	98th	14.32
367.80	99th	14.48

(12) Bitragion Submandibular Arc

The surface distance between the right and left tragion landmarks across the submandibular landmark at the juncture of the jaw and the neck is measured with a tape. The head is in the Frankfort plane and the teeth are lightly occluded.





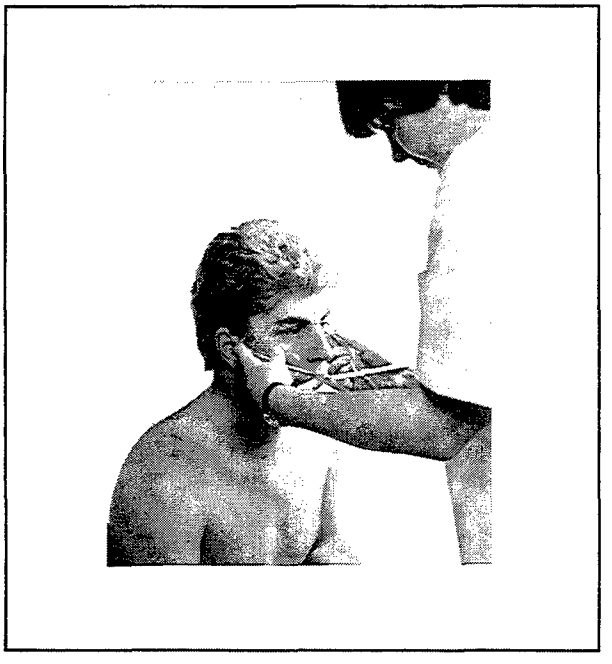
Bitragion Submandibular Arc

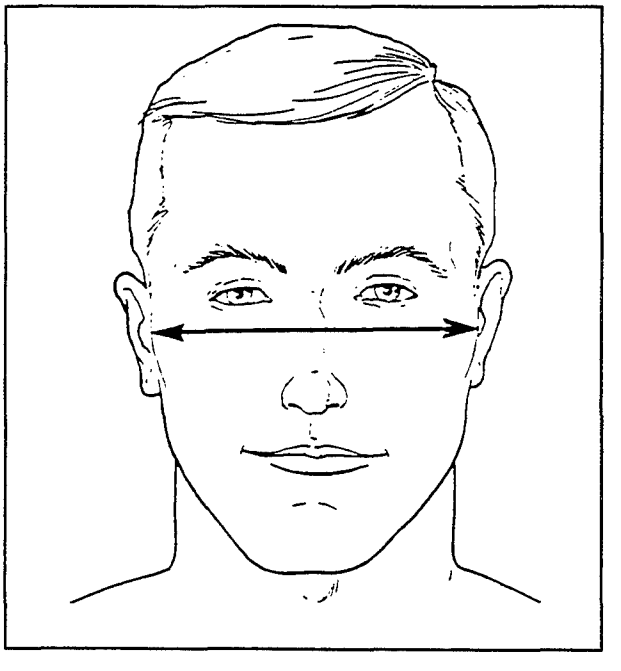
Males		
Millimeters		Inches
304.00	Mean	11.97
0.80	SE(Mean)	0.03
14.40	SD(Mean)	0.57
0.53	SE(SD)	0.02
261.00	Minimum	10.28
373.00	Maximum	14.69
Symmetry-Veta I		1.80
Kurtosis-Veta II		2.10
Coeff. of Variation		4.7%
Sample Size		4444
Percentiles		
Millimeters		Inches
271.40	1st	10.69
275.60	2nd	10.85
278.30	3rd	10.96
281.70	5th	11.09
286.70	10th	11.29
290.10	15th	11.42
292.70	20th	11.52
295.00	25th	11.61
297.10	30th	11.70
299.00	35th	11.77
300.80	40th	11.84
302.50	45th	11.91
304.30	50th	11.98
306.10	55th	12.05
307.90	60th	12.12
309.90	65th	12.20
311.90	70th	12.28
314.10	75th	12.37
316.70	80th	12.47
319.70	85th	12.59
323.50	90th	12.74
329.40	95th	12.97
333.20	97th	13.12
336.00	98th	13.23
340.50	99th	13.41

Females		
Millimeters		Inches
275.00	Mean	10.83
0.70	SE(Mean)	0.03
12.50	SD(Mean)	0.49
0.48	SE(SD)	0.02
235.00	Minimum	9.25
329.00	Maximum	12.95
Symmetry-Veta I		1.50
Kurtosis-Veta II		0.50
Coeff. of Variation		4.6%
Sample Size		2888
Percentiles		
Millimeters		Inches
248.40	1st	9.78
251.10	2nd	9.89
253.00	3rd	9.96
255.60	5th	10.06
259.90	10th	10.23
262.80	15th	10.35
265.20	20th	10.44
267.30	25th	10.52
269.10	30th	10.59
270.80	35th	10.66
272.50	40th	10.73
274.10	45th	10.79
275.60	50th	10.85
277.20	55th	10.91
278.80	60th	10.98
280.40	65th	11.04
282.10	70th	11.11
284.00	75th	11.18
286.10	80th	11.26
288.60	85th	11.36
291.80	90th	11.49
296.80	95th	11.69
300.20	97th	11.82
302.90	98th	11.93
307.30	99th	12.10

(13) Bizygomatic Breadth

The maximum horizontal breadth of the face (between the zygomatic arches) is measured with a spreading caliper.





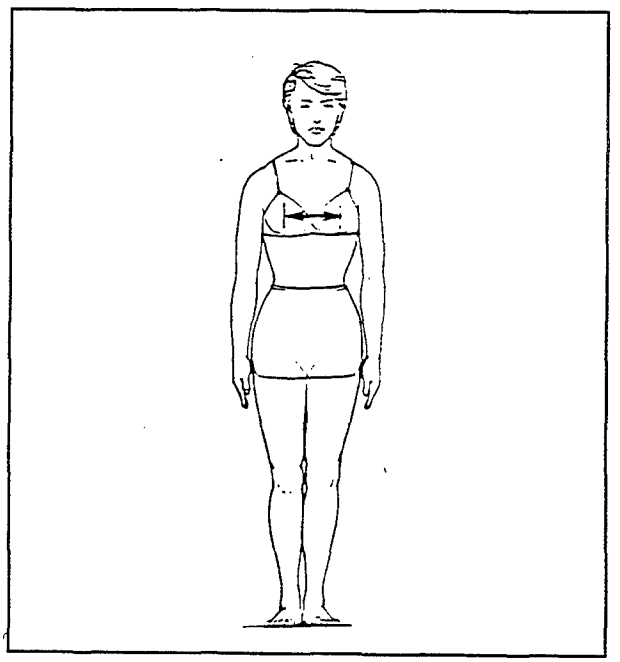
Bizygomatic Breadth

Males		
Millimeters		Inches
140.00	Mean	5.51
0.30	SE(Mean)	0.01
5.70	SD(Mean)	0.22
0.21	SE(SD)	0.01
118.00	Minimum	4.65
165.00	Maximum	6.50
Symmetry-Veta I		1.90
Kurtosis-Veta II		1.30
Coeff. of Variation		4.1%
Sample Size		4444
Percentiles		
Millimeters		Inches
127.60	1st	5.02
129.20	2nd	5.09
130.10	3rd	5.12
131.40	5th	5.17
133.40	10th	5.25
134.70	15th	5.30
135.70	20th	5.34
136.60	25th	5.38
137.40	30th	5.41
138.10	35th	5.44
138.80	40th	5.46
139.50	45th	5.49
140.20	50th	5.52
140.90	55th	5.55
141.60	60th	5.57
142.40	65th	5.61
143.20	70th	5.64
144.10	75th	5.67
145.10	80th	5.71
146.30	85th	5.76
147.80	90th	5.82
150.20	95th	5.91
151.80	97th	5.98
153.00	98th	6.02
155.00	99th	6.10

Females		
Millimeters		Inches
131.00	Mean	5.16
0.30	SE(Mean)	0.01
5.10	SD(Mean)	0.20
0.19	SE(SD)	0.01
117.00	Minimum	4.61
150.00	Maximum	5.91
Symmetry-Veta I		2.00
Kurtosis-Veta II		2.30
Coeff. of Variation		3.9%
Sample Size		2888
Percentiles		
Millimeters		Inches
120.00	1st	4.72
121.10	2nd	4.77
121.90	3rd	4.80
123.00	5th	4.84
124.80	10th	4.91
126.00	15th	4.96
127.00	20th	5.00
127.80	25th	5.03
128.60	30th	5.06
129.30	35th	5.09
130.00	40th	5.12
130.60	45th	5.14
131.20	50th	5.17
131.90	55th	5.19
132.50	60th	5.22
133.20	65th	5.24
133.90	70th	5.27
134.60	75th	5.30
135.50	80th	5.33
136.40	85th	5.37
137.70	90th	5.42
139.70	95th	5.50
141.10	97th	5.56
142.20	98th	5.60
144.10	99th	5.67

(14) Bustpoint/Thelion-Bustpoint/Thelion Breadth

The distance between the right and left bustpoint landmarks on women and the center of the nipples (thelion) on men is measured with a beam caliper. The subject stands erect looking straight ahead. The shoulders and upper extremities are relaxed. The measurement is made at the maximum point of quiet respiration.



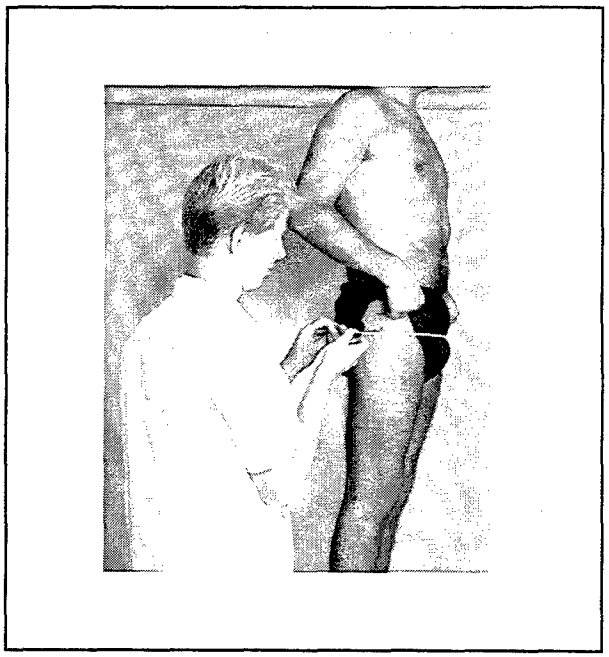
Bustpoint/Thelion-Bustpoint/Thelion Breadth

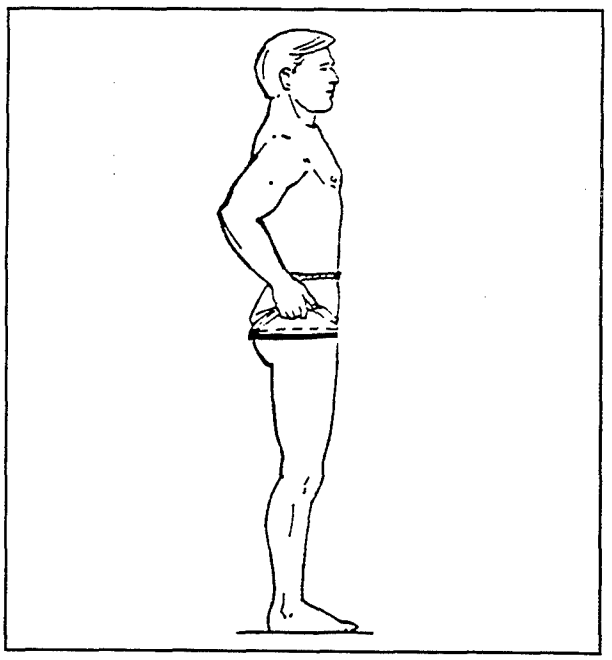
Males		
Millimeters		Inches
216.00	Mean	8.50
1.00	SE(Mean)	0.04
18.80	SD(Mean)	0.74
0.70	SE(SD)	0.03
155.00	Minimum	6.10
285.00	Maximum	11.22
Symmetry-Veta I		2.40
Kurtosis-Veta II		2.00
Coeff. of Variation		8.7%
Sample Size		4447
Percentiles		
Millimeters		Inches
173.90	1st	6.85
179.40	2nd	7.06
182.70	3rd	7.19
187.10	5th	7.37
193.50	10th	7.62
197.80	15th	7.79
201.10	20th	7.92
203.90	25th	8.03
206.50	30th	8.13
208.90	35th	8.22
211.20	40th	8.31
213.50	45th	8.41
215.80	50th	8.50
218.10	55th	8.59
220.40	60th	8.68
222.90	65th	8.78
225.60	70th	8.88
228.60	75th	9.00
232.00	80th	9.13
236.10	85th	9.30
241.40	90th	9.50
249.80	95th	9.83
255.50	97th	10.06
259.90	98th	10.23
267.00	99th	10.51

Females		
Millimeters		Inches
185.00	Mean	7.28
0.90	SE(Mean)	0.04
16.40	SD(Mean)	0.65
0.63	SE(SD)	0.02
128.00	Minimum	5.04
248.00	Maximum	9.76
Symmetry-Veta I		1.30
Kurtosis-Veta II		0.40
Coeff. of Variation		8.9%
Sample Size		2888
Percentiles		
Millimeters		Inches
149.40	1st	5.88
152.80	2nd	6.02
155.20	3rd	6.11
158.60	5th	6.24
164.30	10th	6.47
168.30	15th	6.63
171.50	20th	6.75
174.30	25th	6.86
176.80	30th	6.96
179.00	35th	7.05
181.20	40th	7.13
183.30	45th	7.22
185.30	50th	7.30
187.30	55th	7.37
189.40	60th	7.46
191.50	65th	7.54
193.70	70th	7.63
196.10	75th	7.72
198.90	80th	7.83
202.10	85th	7.96
206.30	90th	8.12
213.00	95th	8.39
217.70	97th	8.57
221.50	98th	8.72
228.00	99th	8.98

(15) Buttock Circumference

The horizontal circumference of the trunk at the level of the maximum protrusion of the right buttock is measured with a tape. The subject stands erect with the heels together and the weight equally distributed on both feet.





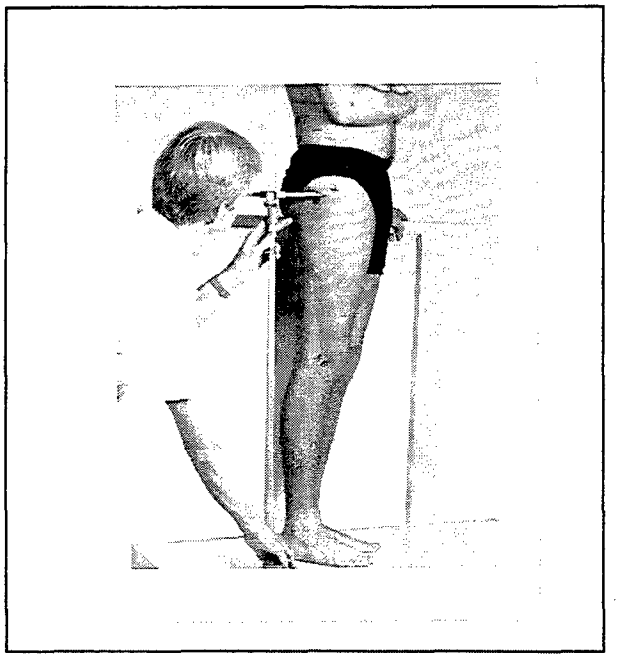
Buttock Circumference

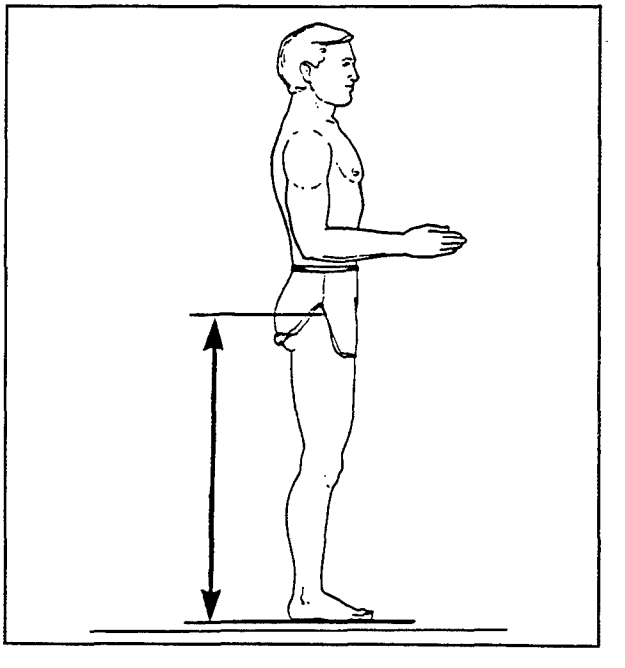
Males		
Millimeters		Inches
987.00	Mean	38.86
3.10	SE(Mean)	0.12
59.50	SD(Mean)	2.34
2.20	SE(SD)	0.09
808.00	Minimum	31.81
1286.00	Maximum	50.63
Symmetry-Veta I		2.30
Kurtosis-Veta II		1.40
Coeff. of Variation		6.0%
Sample Size		4445
Percentiles		
Millimeters		Inches
857.60	1st	33.76
871.50	2nd	34.31
880.60	3rd	34.67
893.10	5th	35.16
912.80	10th	35.94
926.40	15th	36.47
937.20	20th	36.90
946.70	25th	37.27
955.30	30th	37.61
963.30	35th	37.93
970.90	40th	38.22
978.30	45th	38.52
985.80	50th	38.81
993.20	55th	39.10
1000.90	60th	39.41
1008.90	65th	39.72
1017.40	70th	40.06
1026.70	75th	40.42
1037.30	80th	40.84
1049.70	85th	41.33
1066.00	90th	41.97
1090.90	95th	42.95
1107.90	97th	43.62
1120.70	98th	44.12
1141.80	99th	44.95

Females		
Millimeters		Inches
969.00	Mean	38.15
3.20	SE(Mean)	0.13
58.40	SD(Mean)	2.30
2.23	SE(SD)	0.09
787.00	Minimum	30.98
1189.00	Maximum	46.81
Symmetry-Veta I		3.00
Kurtosis-Veta II		0.70
Coeff. of Variation		6.0%
Sample Size		2886
Percentiles		
Millimeters		Inches
850.60	1st	33.49
859.30	2nd	33.83
866.20	3rd	34.10
876.70	5th	34.52
894.90	10th	35.23
908.10	15th	35.75
919.00	20th	36.18
928.40	25th	36.55
937.00	30th	36.89
944.90	35th	37.20
952.50	40th	37.50
959.80	45th	37.79
967.10	50th	38.07
974.30	55th	38.36
981.70	60th	38.65
989.30	65th	38.95
997.50	70th	39.27
1006.30	75th	39.62
1016.40	80th	40.02
1028.40	85th	40.49
1044.30	90th	41.11
1069.90	95th	42.12
1088.40	97th	42.85
1103.20	98th	43.43
1129.00	99th	44.45

(16) Buttock Height

The vertical distance between a standing surface and the level of the maximum protrusion of the right buttock is measured with an anthropometer at the right side of the thigh. The subject stands erect with the heels together and the weight distributed equally on both feet.





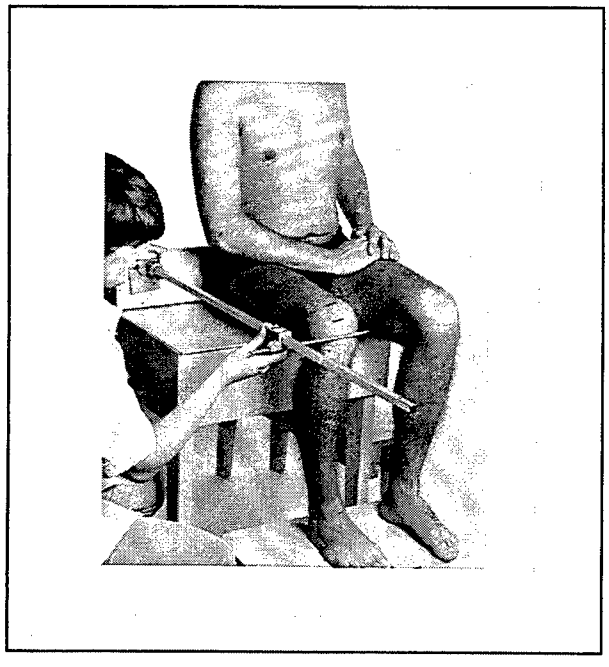
Buttock Height

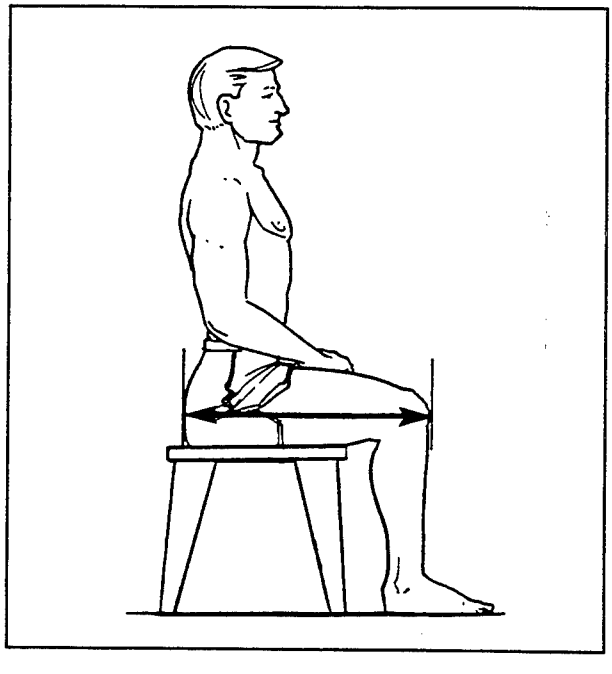
Males		
Millimeters		Inches
886.00	Mean	34.88
2.40	SE(Mean)	0.09
46.10	SD(Mean)	1.81
1.71	SE(SD)	0.07
701.00	Minimum	27.60
1075.00	Maximum	42.32
Symmetry-Veta I		2.00
Kurtosis-Veta II		1.90
Coeff. of Variation		5.2%
Sample Size		4445
Percentiles		
Millimeters		Inches
784.20	1st	30.87
796.10	2nd	31.34
803.60	3rd	31.64
813.80	5th	32.04
829.50	10th	32.66
840.10	15th	33.07
848.50	20th	33.41
855.70	25th	33.69
862.30	30th	33.95
868.40	35th	34.19
874.20	40th	34.42
879.90	45th	34.64
885.50	50th	34.86
891.20	55th	35.09
897.00	60th	35.31
903.10	65th	35.56
909.60	70th	35.81
916.80	75th	36.09
924.90	80th	36.41
934.50	85th	36.79
947.10	90th	37.29
966.50	95th	38.05
979.70	97th	38.57
989.80	98th	38.97
1006.30	99th	39.62

Females		
Millimeters		Inches
835.00	Mean	32.87
2.40	SE(Mean)	0.09
43.70	SD(Mean)	1.72
1.67	SE(SD)	0.07
695.00	Minimum	27.36
1051.00	Maximum	41.38
Symmetry-Veta I		2.80
Kurtosis-Veta II		2.50
Coeff. of Variation		5.2%
Sample Size		2886
Percentiles		
Millimeters		Inches
739.40	1st	29.11
751.30	2nd	29.58
758.50	3rd	29.86
767.90	5th	30.23
781.90	10th	30.78
791.30	15th	31.15
798.70	20th	31.44
805.30	25th	31.70
811.20	30th	31.94
816.80	35th	32.16
822.20	40th	32.37
827.50	45th	32.58
832.90	50th	32.79
838.40	55th	33.01
844.00	60th	33.23
850.00	65th	33.46
856.30	70th	33.71
863.40	75th	33.99
871.40	80th	34.31
880.90	85th	34.68
893.20	90th	35.17
911.70	95th	35.89
923.70	97th	36.37
932.50	98th	36.71
946.00	99th	37.24

(17) Buttock-Knee Length

The horizontal distance between a buttock plate placed at the most posterior point on either buttock and the anterior point of the right knee is measured with an anthropometer. The subject sits erect. The thighs are parallel and the knees flexed 90 degrees with the feet in line with the thighs.





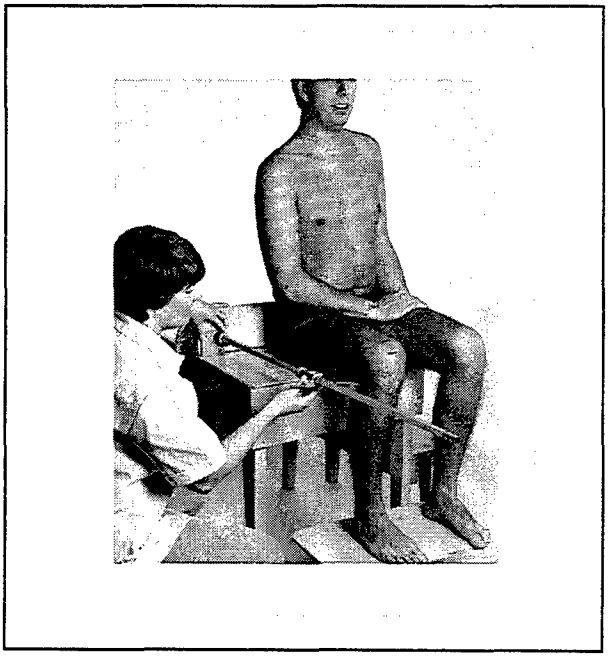
Buttock-Knee Length

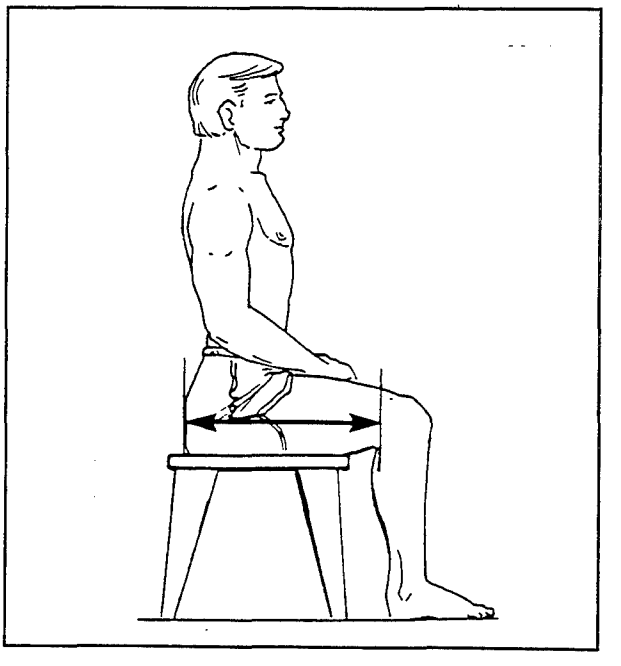
Males		
Millimeters		Inches
616.00	Mean	24.25
1.50	SE(Mean)	0.06
28.70	SD(Mean)	1.13
1.06	SE(SD)	0.04
498.00	Minimum	19.61
725.00	Maximum	28.54
Symmetry-Veta I		0.80
Kurtosis-Veta II		-0.60
Coeff. of Variation		4.7%
Sample Size		4443
Percentiles		
Millimeters		Inches
550.50	1st	21.67
558.10	2nd	21.97
562.90	3rd	22.16
569.40	5th	22.42
579.50	10th	22.81
586.30	15th	23.08
591.80	20th	23.30
596.50	25th	23.48
600.80	30th	23.65
604.70	35th	23.81
608.50	40th	23.96
612.10	45th	24.10
615.80	50th	24.24
619.40	55th	24.39
623.10	60th	24.53
627.00	65th	24.69
631.10	70th	24.85
635.50	75th	25.02
640.50	80th	25.22
646.40	85th	25.45
653.90	90th	25.74
665.10	95th	26.19
672.50	97th	26.48
678.00	98th	26.69
686.70	99th	27.04

Females		
Millimeters		Inches
586.00	Mean	23.07
1.60	SE(Mean)	0.06
29.30	SD(Mean)	1.15
1.12	SE(SD)	0.04
491.00	Minimum	19.33
692.00	Maximum	27.24
Symmetry-Veta I		2.00
Kurtosis-Veta II		-1.10
Coeff. of Variation		5.0%
Sample Size		2888
Percentiles		
Millimeters		Inches
522.40	1st	20.57
529.40	2nd	20.84
533.90	3rd	21.02
540.00	5th	21.26
549.40	10th	21.63
555.90	15th	21.89
561.10	20th	22.09
565.70	25th	22.27
569.90	30th	22.44
573.80	35th	22.59
577.60	40th	22.74
581.30	45th	22.89
585.00	50th	23.03
588.70	55th	23.18
592.60	60th	23.33
596.60	65th	23.49
600.90	70th	23.66
605.60	75th	23.84
610.90	80th	24.05
617.10	85th	24.30
625.10	90th	24.61
637.10	95th	25.08
644.90	97th	25.39
650.60	98th	25.61
659.50	99th	25.96

(18) Buttock-Popliteal Length

The horizontal distance between a buttock plate placed at the most posterior point on either buttock and the back of the right knee (the popliteal fossa at the dorsal juncture of the calf and thigh) is measured with an anthropometer. The subject sits erect. The thighs are parallel and the knees flexed 90 degrees with the feet in line with the thighs.





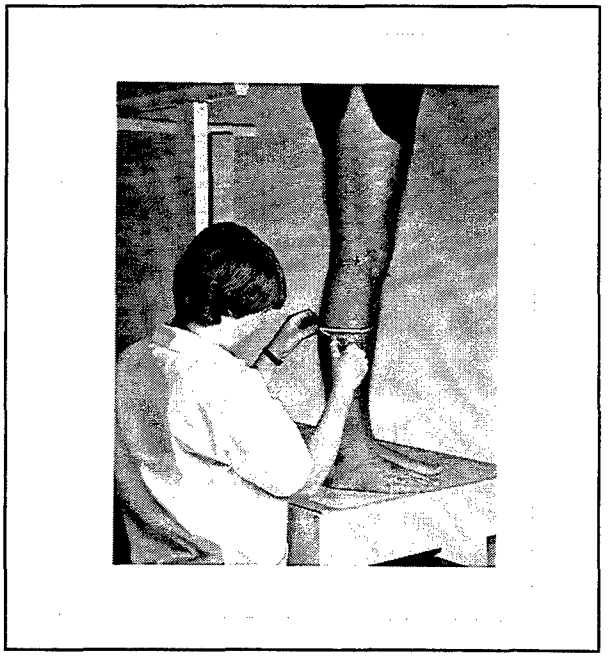
Buttock-Popliteal Length

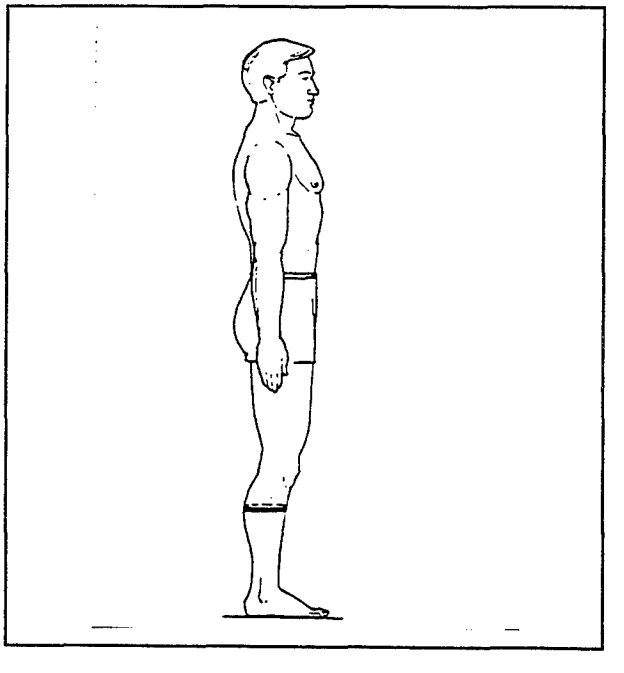
Males		
Millimeters		Inches
499.00	Mean	19.65
1.30	SE(Mean)	0.05
25.70	SD(Mean)	1.01
0.95	SE(SD)	0.04
401.00	Minimum	15.79
601.00	Maximum	23.66
Symmetry-Veta I		0.80
Kurtosis-Veta II		-0.10
Coeff. of Variation		5.2%
Sample Size		4445
Percentiles		
Millimeters		Inches
440.40	1st	17.34
447.60	2nd	17.62
452.10	3rd	17.80
458.10	5th	18.04
467.20	10th	18.39
473.40	15th	18.64
478.20	20th	18.83
482.40	25th	18.99
486.10	30th	19.14
489.60	35th	19.28
493.00	40th	19.41
496.20	45th	19.54
499.40	50th	19.66
502.70	55th	19.79
506.00	60th	19.92
509.50	65th	20.06
513.10	70th	20.20
517.10	75th	20.36
521.60	80th	20.54
526.90	85th	20.74
533.60	90th	21.01
543.60	95th	21.40
550.10	97th	21.66
554.90	98th	21.85
562.50	99th	22.15

Females		
Millimeters		Inches
479.00	Mean	18.86
1.40	SE(Mean)	0.06
26.20	SD(Mean)	1.03
1.00	SE(SD)	0.04
398.00	Minimum	15.67
578.00	Maximum	22.76
Symmetry-Veta I		2.30
Kurtosis-Veta II		-0.80
Coeff. of Variation		5.5%
Sample Size		2888
Percentiles		
Millimeters		Inches
422.50	1st	16.63
429.00	2nd	16.89
433.00	3rd	17.05
438.40	5th	17.26
446.50	10th	17.58
452.20	15th	17.80
456.70	20th	17.98
460.70	25th	18.14
464.40	30th	18.28
467.80	35th	18.42
471.20	40th	18.55
474.50	45th	18.68
477.80	50th	18.81
481.20	55th	18.94
484.70	60th	19.08
488.40	65th	19.23
492.30	70th	19.38
496.70	75th	19.56
501.50	80th	19.74
507.20	85th	19.97
514.50	90th	20.26
525.00	95th	20.67
531.60	97th	20.93
536.30	98th	21.11
543.20	99th	21.39

(19) Calf Circumference

The maximum horizontal circumference of the right calf is measured with a tape. The subject stands erect with the heels approximately 10 cm apart and the weight distributed equally on both feet.





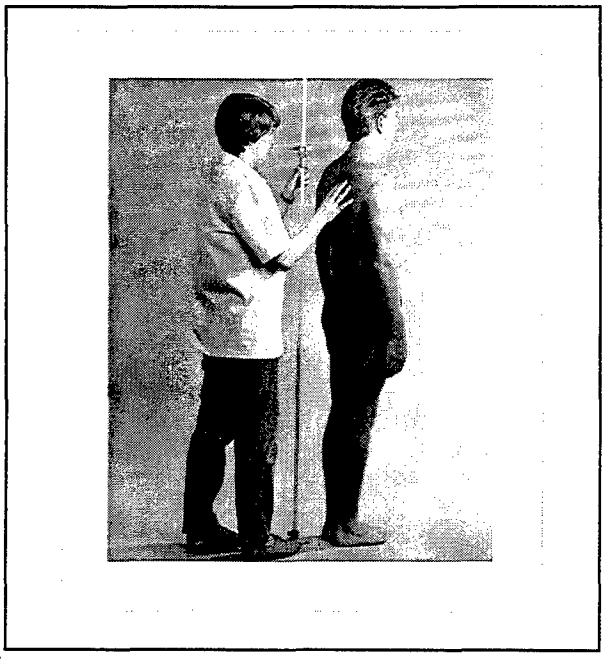
Calf Circumference

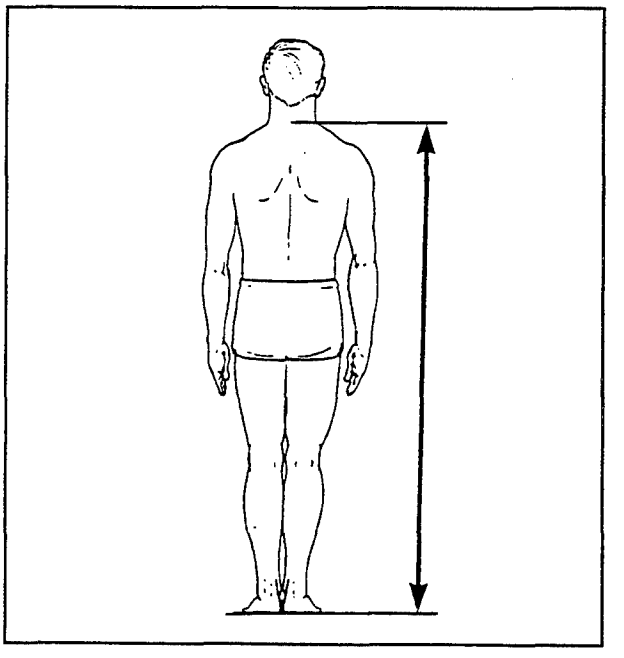
Males		
Millimeters		Inches
379.00	Mean	14.92
1.30	SE(Mean)	0.05
24.90	SD(Mean)	0.98
0.92	SE(SD)	0.04
277.00	Minimum	10.91
470.00	Maximum	18.50
Symmetry-Veta I		0.60
Kurtosis-Veta II		0.40
Coeff. of Variation		6.6%
Sample Size		4431
Percentiles		
Millimeters		Inches
323.00	1st	12.72
329.00	2nd	12.95
333.10	3rd	13.11
338.70	5th	13.33
347.80	10th	13.69
353.90	15th	13.93
358.80	20th	14.13
363.10	25th	14.30
366.80	30th	14.44
370.30	35th	14.58
373.50	40th	14.70
376.70	45th	14.83
379.80	50th	14.95
382.90	55th	15.07
386.00	60th	15.20
389.20	65th	15.32
392.60	70th	15.46
396.20	75th	15.60
400.40	80th	15.76
405.20	85th	15.95
411.50	90th	16.20
421.30	95th	16.59
428.10	97th	16.85
433.40	98th	17.06
442.30	99th	17.41

Females		
Millimeters		Inches
353.00	Mean	13.90
1.20	SE(Mean)	0.05
23.00	SD(Mean)	0.91
0.88	SE(SD)	0.03
285.00	Minimum	11.22
459.00	Maximum	18.07
Symmetry-Veta I		1.80
Kurtosis-Veta II		2.30
Coeff. of Variation		6.5%
Sample Size		2880
Percentiles		
Millimeters		Inches
301.20	1st	11.86
306.80	2nd	12.08
310.60	3rd	12.23
315.80	5th	12.43
324.10	10th	12.76
329.70	15th	12.98
334.10	20th	13.15
337.90	25th	13.30
341.30	30th	13.44
344.40	35th	13.56
347.40	40th	13.68
350.30	45th	13.79
353.10	50th	13.90
355.90	55th	14.01
358.80	60th	14.13
361.70	65th	14.24
364.80	70th	14.36
368.30	75th	14.50
372.10	80th	14.65
376.70	85th	14.83
382.70	90th	15.07
392.20	95th	15.44
398.80	97th	15.70
404.10	98th	15.91
413.00	99th	16.26

(20) Cervicale Height

The vertical distance between a standing surface and the cervicale landmark on the spine at the base of the neck is measured with an anthropometer. The subject stands erect with the head in the Frankfort plane. The heels are together with the weight distributed equally on both feet. The shoulders and upper extremities are relaxed. The measurement is taken at the maximum point of quiet respiration.





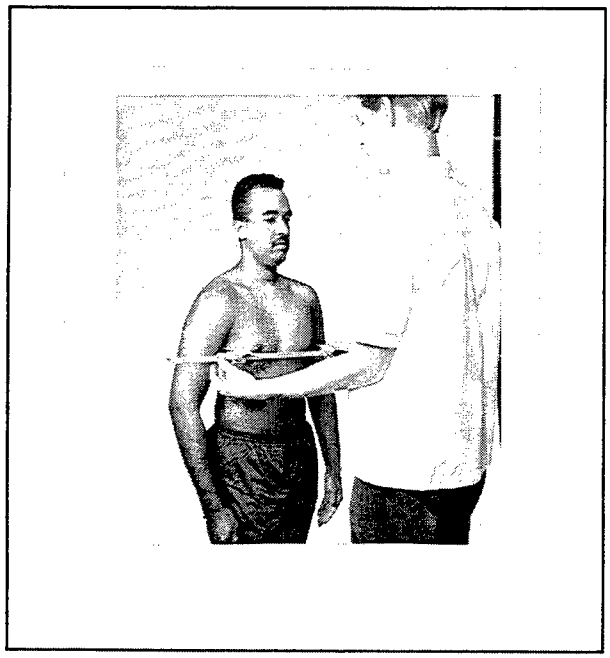
Cervicale Height

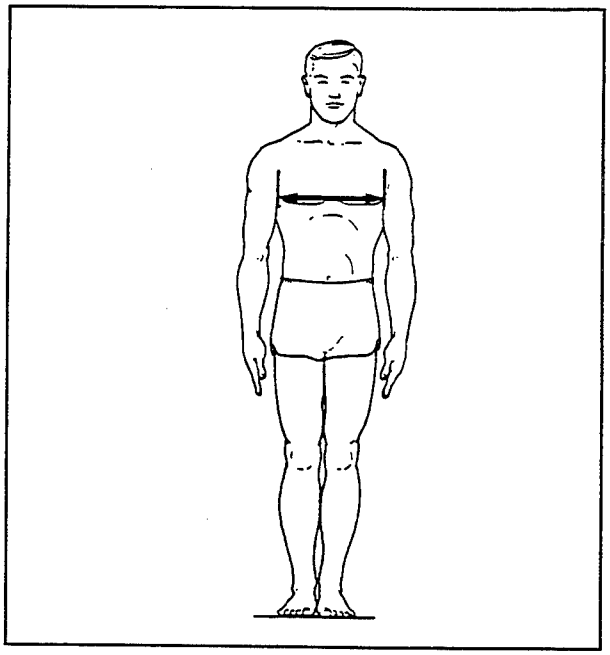
Males		
Millimeters		Inches
1521.00	Mean	59.88
3.30	SE(Mean)	0.13
62.30	SD(Mean)	2.45
2.31	SE(SD)	0.09
1281.00	Minimum	50.43
1734.00	Maximum	68.27
Symmetry-Veta I		0.10
Kurtosis-Veta II		-0.40
Coeff. of Variation		4.1%
Sample Size		4447
Percentiles		
Millimeters		Inches
1377.60	1st	54.24
1393.50	2nd	54.86
1403.90	3rd	55.27
1418.30	5th	55.84
1440.90	10th	56.73
1456.30	15th	57.33
1468.60	20th	57.82
1479.20	25th	58.24
1488.60	30th	58.61
1497.40	35th	58.95
1505.60	40th	59.28
1513.60	45th	59.59
1521.50	50th	59.90
1529.40	55th	60.21
1537.40	60th	60.53
1545.60	65th	60.85
1554.30	70th	61.19
1563.70	75th	61.56
1574.20	80th	61.98
1586.30	85th	62.45
1601.80	90th	63.06
1625.10	95th	63.98
1640.50	97th	64.59
1652.10	98th	65.04
1670.70	99th	65.78

Females		
Millimeters		Inches
1409.00	Mean	55.47
3.10	SE(Mean)	0.12
57.50	SD(Mean)	2.26
2.20	SE(SD)	0.09
1236.00	Minimum	48.66
1608.00	Maximum	63.31
Symmetry-Veta I		0.90
Kurtosis-Veta II		-0.40
Coeff. of Variation		4.1%
Sample Size		2888
Percentiles		
Millimeters		Inches
1272.60	1st	50.10
1291.10	2nd	50.83
1302.10	3rd	51.26
1316.30	5th	51.82
1337.10	10th	52.64
1350.70	15th	53.18
1361.30	20th	53.59
1370.40	25th	53.95
1378.70	30th	54.28
1386.30	35th	54.58
1393.60	40th	54.87
1400.80	45th	55.15
1407.90	50th	55.43
1415.20	55th	55.72
1422.60	60th	56.01
1430.30	65th	56.31
1438.50	70th	56.63
1447.60	75th	56.99
1457.80	80th	57.39
1469.70	85th	57.86
1484.80	90th	58.46
1507.20	95th	59.34
1521.30	97th	59.89
1531.50	98th	60.30
1546.70	99th	60.89

(21) Chest Breadth

The maximum horizontal breadth of the chest at the level of the right bustpoint on women or the nipple on men is measured with a beam caliper. The subject stands erect looking straight ahead with the heels together, the weight distributed equally on both feet. The measurement is taken at the maximum point of quiet respiration. **Note:** Breast tissue and latissimus dorsi muscle tissue are NOT included in this measurement if they extend beyond the rib cage.





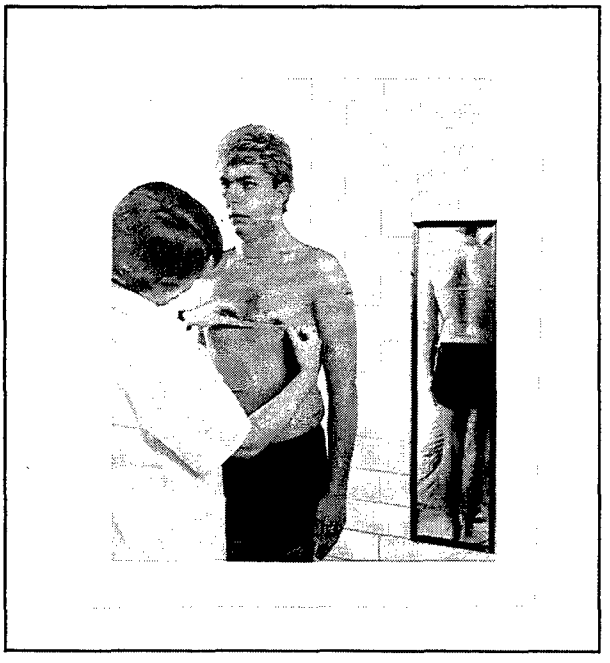
Chest Breadth

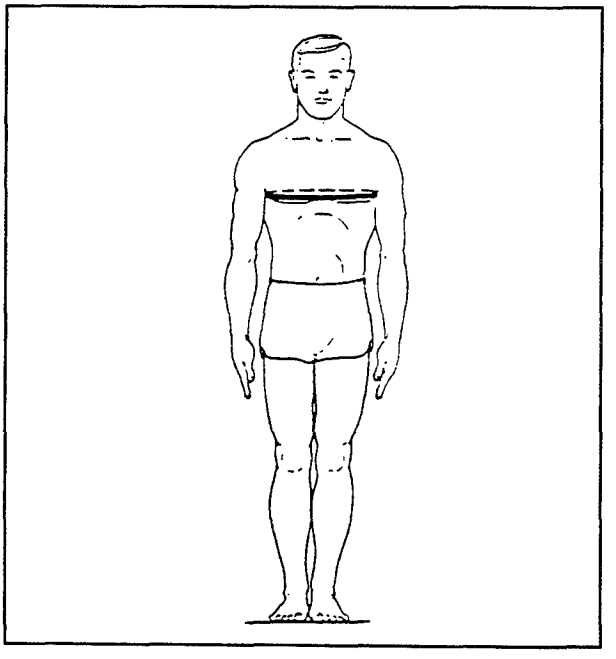
Males		
Millimeters		Inches
323.00	Mean	12.72
1.30	SE(Mean)	0.05
25.10	SD(Mean)	0.99
0.93	SE(SD)	0.04
256.00	Minimum	10.08
422.00	Maximum	16.61
Symmetry-Veta I		4.00
Kurtosis-Veta II		1.20
Coeff. of Variation		7.8%
Sample Size		4447
Percentiles		
Millimeters		Inches
274.10	1st	10.79
278.20	2nd	10.95
281.00	3rd	11.06
285.20	5th	11.23
292.20	10th	11.50
297.30	15th	11.70
301.60	20th	11.87
305.40	25th	12.02
308.90	30th	12.16
312.20	35th	12.29
315.40	40th	12.42
318.50	45th	12.54
321.70	50th	12.67
324.90	55th	12.79
328.20	60th	12.92
331.70	65th	13.06
335.40	70th	13.20
339.50	75th	13.37
344.20	80th	13.55
349.80	85th	13.77
357.00	90th	14.06
368.00	95th	14.49
375.50	97th	14.78
381.20	98th	15.01
390.40	99th	15.37

Females		
Millimeters		Inches
281.00	Mean	11.06
1.10	SE(Mean)	0.04
19.50	SD(Mean)	0.77
0.74	SE(SD)	0.03
225.00	Minimum	8.86
375.00	Maximum	14.76
Symmetry-Veta I		5.30
Kurtosis-Veta II		4.30
Coeff. of Variation		6.9%
Sample Size		2888
Percentiles		
Millimeters		Inches
243.10	1st	9.57
246.30	2nd	9.70
248.50	3rd	9.78
251.80	5th	9.91
257.30	10th	10.13
261.30	15th	10.29
264.60	20th	10.42
267.40	25th	10.53
270.10	30th	10.63
272.60	35th	10.73
274.90	40th	10.82
277.30	45th	10.92
279.60	50th	11.01
282.00	55th	11.10
284.50	60th	11.20
287.10	65th	11.30
289.90	70th	11.41
293.10	75th	11.54
296.70	80th	11.68
301.10	85th	11.85
306.90	90th	12.08
316.40	95th	12.46
323.30	97th	12.73
328.70	98th	12.94
338.00	99th	13.31

(22) Chest Circumference

The maximum horizontal circumference of the chest at the fullest part of the breast is measured with a tape. The subject stands erect looking straight ahead. The shoulders and upper extremities are relaxed. The measurement is taken at the maximum point of quiet respiration.





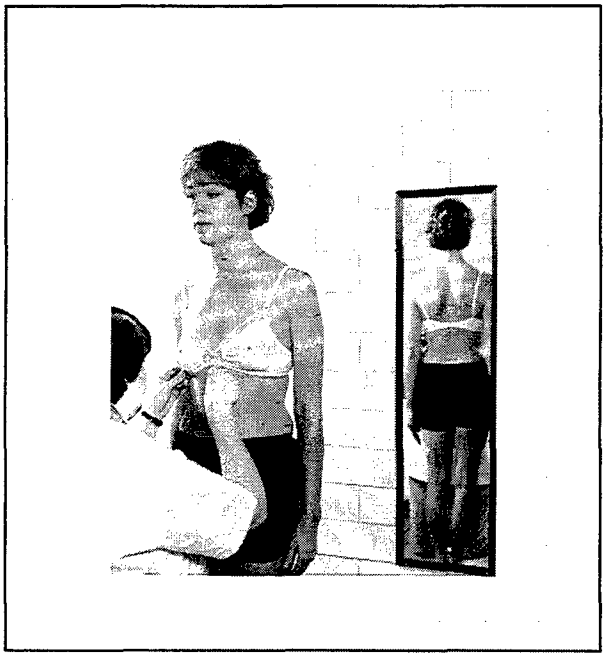
Chest Circumference

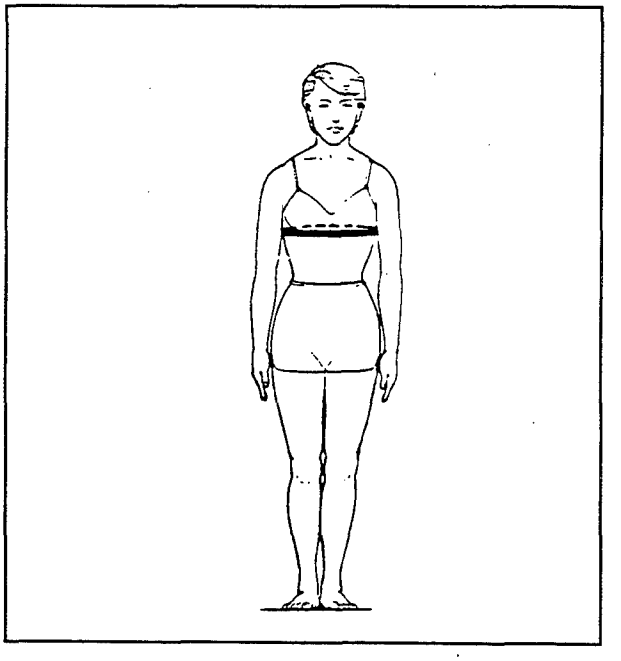
Males		
Millimeters		Inches
996.00	Mean	39.21
3.50	SE(Mean)	0.14
67.00	SD(Mean)	2.64
2.48	SE(SD)	0.10
775.00	Minimum	30.51
1330.00	Maximum	52.36
Symmetry-Veta I		3.50
Kurtosis-Veta II		3.70
Coeff. of Variation		6.7%
Sample Size		4447
Percentiles		
Millimeters		Inches
854.90	1st	33.66
869.10	2nd	34.22
878.50	3rd	34.59
891.60	5th	35.10
912.70	10th	35.93
927.40	15th	36.51
939.30	20th	36.98
949.70	25th	37.39
959.10	30th	37.76
967.90	35th	38.11
976.40	40th	38.44
984.60	45th	38.76
992.90	50th	39.09
1001.20	55th	39.42
1009.70	60th	39.75
1018.70	65th	40.11
1028.20	70th	40.48
1038.70	75th	40.89
1050.70	80th	41.37
1065.00	85th	41.93
1083.60	90th	42.66
1112.70	95th	43.81
1132.70	97th	44.59
1148.10	98th	45.20
1173.60	99th	46.20

Females		
Millimeters		Inches
911.00	Mean	35.87
3.40	SE(Mean)	0.13
62.70	SD(Mean)	2.47
2.39	SE(SD)	0.09
711.00	Minimum	27.99
1222.00	Maximum	48.11
Symmetry-Veta I		5.30
Kurtosis-Veta II		5.60
Coeff. of Variation		6.9%
Sample Size		2888
Percentiles		
Millimeters		Inches
785.50	1st	30.93
797.80	2nd	31.41
806.00	3rd	31.73
817.40	5th	32.18
835.50	10th	32.89
848.20	15th	33.39
858.50	20th	33.80
867.60	25th	34.16
875.80	30th	34.48
883.60	35th	34.79
891.10	40th	35.08
898.50	45th	35.37
906.00	50th	35.67
913.60	55th	35.97
921.50	60th	36.28
929.90	65th	36.61
939.00	70th	36.97
949.10	75th	37.37
960.90	80th	37.83
975.10	85th	38.39
994.30	90th	39.15
1025.50	95th	40.37
1047.80	97th	41.25
1065.30	98th	41.94
1095.20	99th	43.12

(23) Chest Circumference Below Breast

The horizontal circumference of the chest at the level of the inferior juncture of the lowest breast with the rib cage is measured with a tape. On women, the tape may lie on the bra. The subject stands erect looking straight ahead. The shoulders and upper extremities are relaxed. The measurement is taken at the maximum point of quiet respiration.





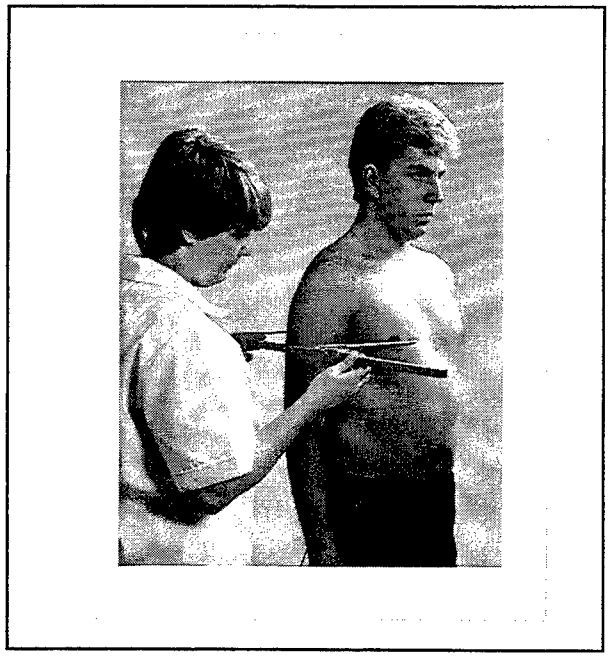
Chest Circumference Below Breast

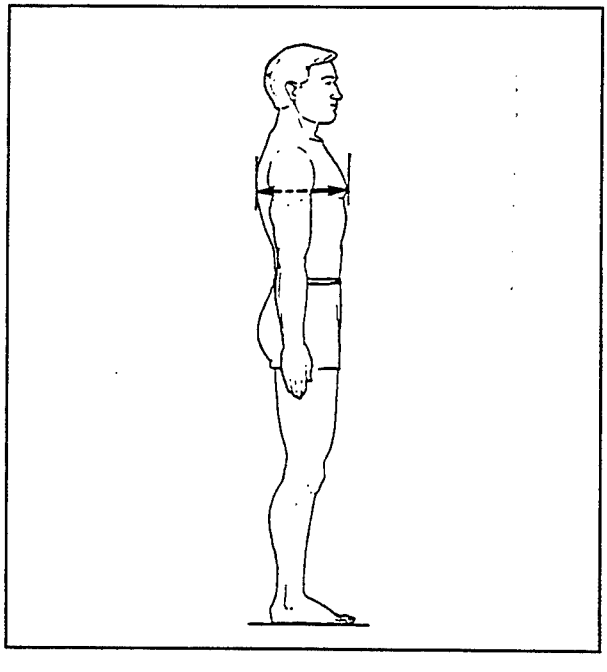
Males		
Millimeters		Inches
930.00	Mean	36.61
3.30	SE(Mean)	0.13
63.80	SD(Mean)	2.51
2.36	SE(SD)	0.09
723.00	Minimum	28.46
1211.00	Maximum	47.68
Symmetry-Veta I		3.80
Kurtosis-Veta II		3.40
Coeff. of Variation		6.9%
Sample Size		4447
Percentiles		
Millimeters		Inches
799.80	1st	31.49
812.50	2nd	31.99
821.00	3rd	32.32
832.90	5th	32.79
852.10	10th	33.55
865.60	15th	34.08
876.60	20th	34.51
886.30	25th	34.89
895.10	30th	35.24
903.40	35th	35.57
911.40	40th	35.88
919.20	45th	36.19
927.10	50th	36.50
935.00	55th	36.81
943.20	60th	37.13
951.80	65th	37.47
961.00	70th	37.83
971.20	75th	38.24
982.80	80th	38.69
996.60	85th	39.24
1014.70	90th	39.95
1042.90	95th	41.06
1062.20	97th	41.82
1077.00	98th	42.40
1101.40	99th	43.36

Females		
Millimeters		Inches
773.00	Mean	30.43
2.70	SE(Mean)	0.11
50.20	SD(Mean)	1.98
1.92	SE(SD)	0.08
641.00	Minimum	25.24
988.00	Maximum	38.90
Symmetry-Veta I		6.20
Kurtosis-Veta II		6.70
Coeff. of Variation		6.5%
Sample Size		2888
Percentiles		
Millimeters		Inches
674.60	1st	26.56
684.20	2nd	26.94
690.60	3rd	27.19
699.50	5th	27.54
713.80	10th	28.10
723.80	15th	28.50
731.80	20th	28.81
738.90	25th	29.09
745.30	30th	29.34
751.30	35th	29.58
757.20	40th	29.81
762.90	45th	30.04
768.80	50th	30.27
774.70	55th	30.50
780.90	60th	30.74
787.50	65th	31.00
794.70	70th	31.29
802.80	75th	31.61
812.30	80th	31.98
824.00	85th	32.44
840.00	90th	33.07
866.60	95th	34.12
886.10	97th	34.89
901.80	98th	35.50
929.10	99th	36.58

(24) Chest Depth

The horizontal distance between the chest, at the level of the right bustpoint on women or the nipple on men, and the back at the same level is measured with a beam caliper. The subject stands erect looking straight ahead. The shoulders and upper extremities are relaxed. The measurement is taken at the maximum point of quiet respiration.





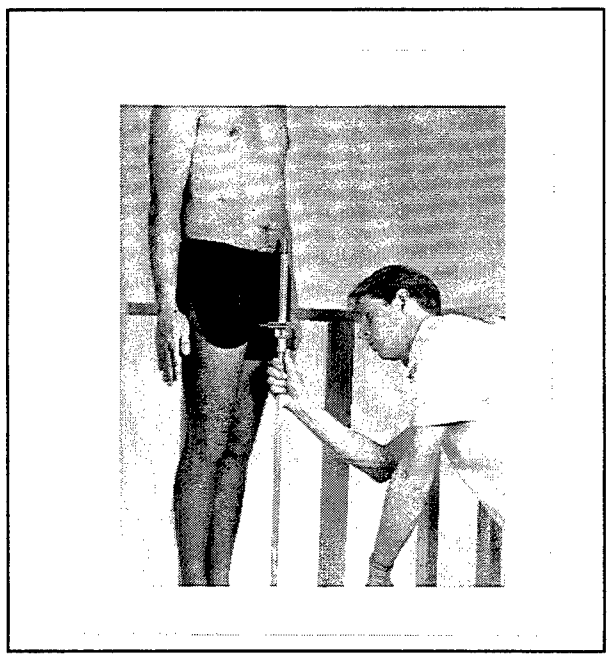
Chest Depth

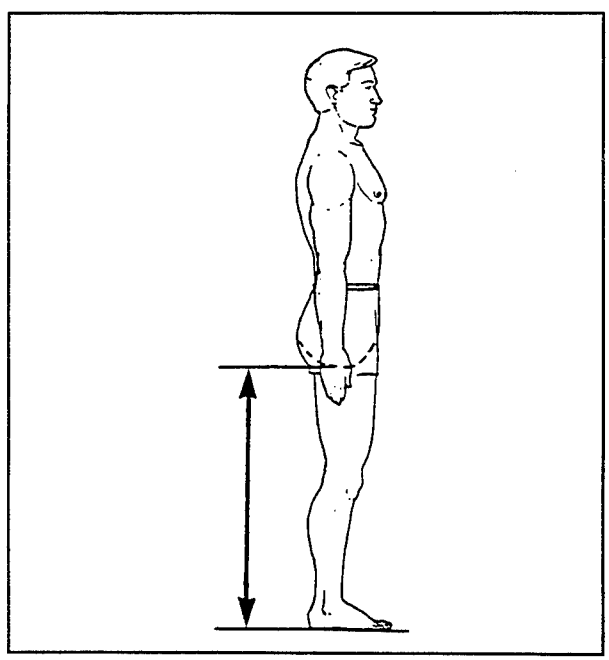
Males		
Millimeters		Inches
244.00	Mean	9.61
1.10	SE(Mean)	0.04
20.80	SD(Mean)	0.82
0.77	SE(SD)	0.03
183.00	Minimum	7.20
362.00	Maximum	14.25
Symmetry-Veta I		2.50
Kurtosis-Veta II		1.30
Coeff. of Variation		8.5%
Sample Size		4447
Percentiles		
Millimeters		Inches
199.30	1st	7.85
203.70	2nd	8.02
206.60	3rd	8.13
210.80	5th	8.30
217.50	10th	8.56
222.30	15th	8.75
226.10	20th	8.90
229.50	25th	9.04
232.60	30th	9.16
235.40	35th	9.27
238.10	40th	9.37
240.80	45th	9.48
243.40	50th	9.58
246.10	55th	9.69
248.80	60th	9.80
251.60	65th	9.91
254.60	70th	10.02
257.90	75th	10.15
261.60	80th	10.30
265.90	85th	10.47
271.40	90th	10.69
279.80	95th	11.02
285.40	97th	11.24
289.60	98th	11.40
296.30	99th	11.67

Females		
Millimeters		Inches
240.00	Mean	9.45
1.10	SE(Mean)	0.04
20.90	SD(Mean)	0.82
0.80	SE(SD)	0.03
170.00	Minimum	6.69
340.00	Maximum	13.39
Symmetry-Veta I		5.10
Kurtosis-Veta II		6.00
Coeff. of Variation		8.7%
Sample Size		2888
Percentiles		
Millimeters		Inches
197.10	1st	7.76
202.10	2nd	7.96
205.10	3rd	8.07
209.20	5th	8.24
215.40	10th	8.48
219.60	15th	8.65
222.90	20th	8.78
225.90	25th	8.89
228.60	30th	9.00
231.10	35th	9.10
233.50	40th	9.19
235.90	45th	9.29
238.40	50th	9.39
240.90	55th	9.48
243.50	60th	9.59
246.30	65th	9.70
249.30	70th	9.81
252.70	75th	9.95
256.60	80th	10.10
261.40	85th	10.29
267.90	90th	10.55
278.30	95th	10.96
285.60	97th	11.24
291.40	98th	11.47
301.00	99th	11.85

(25) Crotch Height

The vertical distance between the standing surface and the crotch is measured with an anthropometer. The subject stands erect looking straight ahead. The heels are together and the weight is distributed equally on both feet.





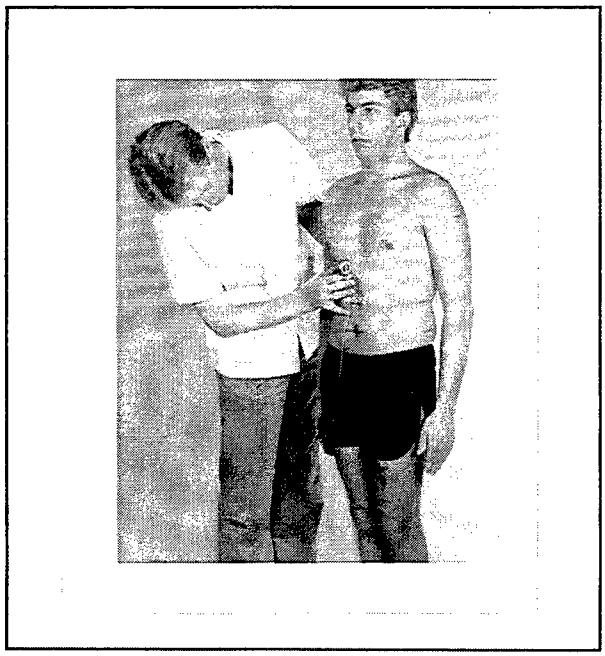
Crotch Height

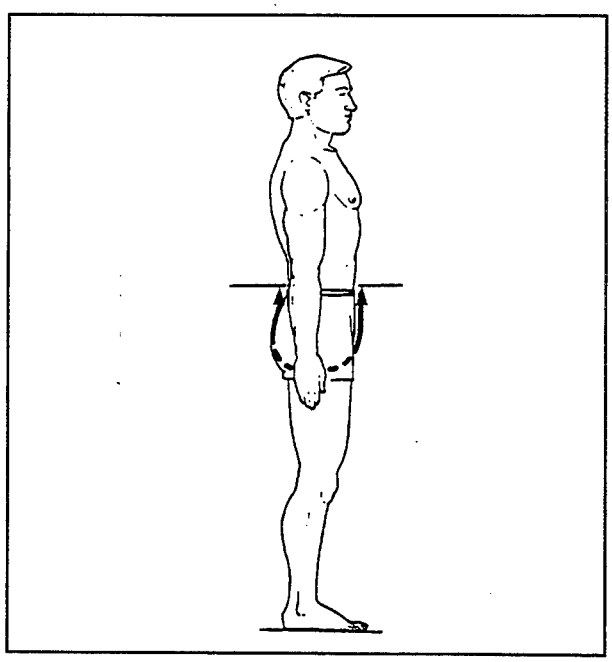
Males		
Millimeters		Inches
836.00	Mean	32.91
2.40	SE(Mean)	0.09
45.50	SD(Mean)	1.79
1.68	SE(SD)	0.07
671.00	Minimum	26.42
1016.00	Maximum	40.00
Symmetry-Veta I		0.80
Kurtosis-Veta II		0.70
Coeff. of Variation		5.4%
Sample Size		4445
Percentiles		
Millimeters		Inches
730.00	1st	28.74
743.80	2nd	29.28
752.20	3rd	29.61
763.20	5th	30.05
779.50	10th	30.69
790.30	15th	31.11
798.80	20th	31.45
806.10	25th	31.74
812.70	30th	32.00
818.80	35th	32.24
824.60	40th	32.46
830.30	45th	32.69
835.90	50th	32.91
841.60	55th	33.13
847.40	60th	33.36
853.40	65th	33.60
859.90	70th	33.85
866.90	75th	34.13
874.90	80th	34.44
884.20	85th	34.81
896.10	90th	35.28
913.90	95th	35.98
925.40	97th	36.43
933.80	98th	36.76
946.80	99th	37.28

Females		
Millimeters		Inches
768.00	Mean	30.24
2.30	SE(Mean)	0.09
42.70	SD(Mean)	1.68
1.63	SE(SD)	0.06
646.00	Minimum	25.43
957.00	Maximum	37.68
Symmetry-Veta I		2.30
Kurtosis-Veta II		1.00
Coeff. of Variation		5.6%
Sample Size		2886
Percentiles		
Millimeters		Inches
672.30	1st	26.47
684.30	2nd	26.94
691.70	3rd	27.23
701.30	5th	27.61
715.70	10th	28.18
725.30	15th	28.56
732.90	20th	28.85
739.50	25th	29.11
745.40	30th	29.35
751.00	35th	29.57
756.30	40th	29.78
761.50	45th	29.98
766.70	50th	30.19
772.00	55th	30.39
777.50	60th	30.61
783.20	65th	30.83
789.30	70th	31.07
796.10	75th	31.34
803.80	80th	31.65
812.90	85th	32.00
824.80	90th	32.47
843.00	95th	33.19
855.10	97th	33.67
864.10	98th	34.02
878.50	99th	34.59

(26) Crotch Length (Omphalion)

The distance between the abdomen at the level of the center of the navel (omphalion) to the same level on the back is measured with a tape passing through the crotch to the right of the genitalia. The tape is held vertically both in front and in back. The subject stands erect looking straight ahead. The heels are together with the weight distributed equally on both feet. The measurement is taken at the maximum point of quiet respiration.





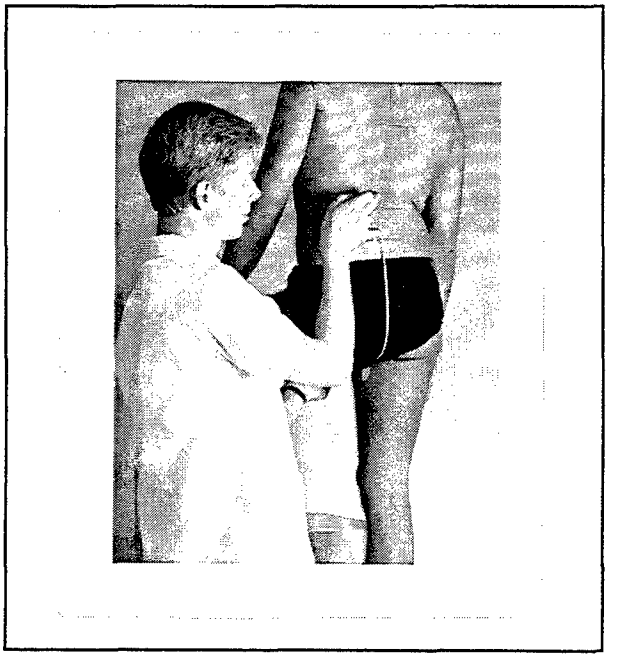
Crotch Length (Omphalion)

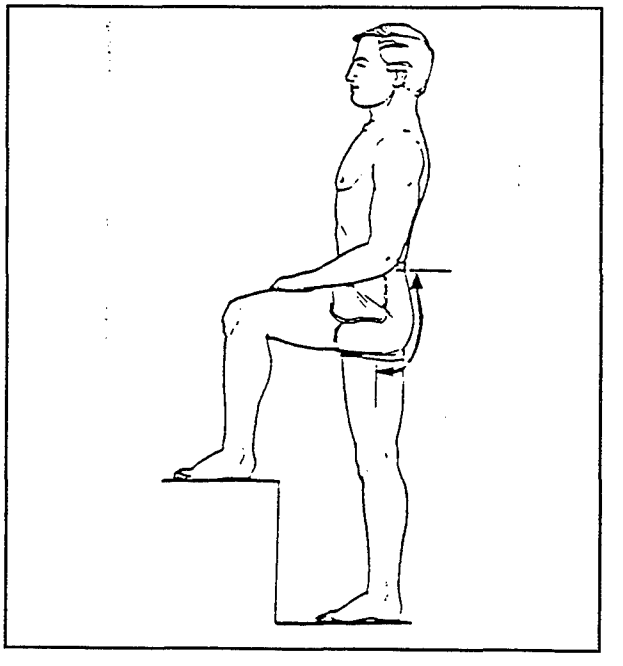
Males		
Millimeters		Inches
643.00	Mean	25.31
2.20	SE(Mean)	0.09
41.70	SD(Mean)	1.64
1.54	SE(SD)	0.06
504.00	Minimum	19.84
830.00	Maximum	32.68
Symmetry-Veta I		2.00
Kurtosis-Veta II		2.30
Coeff. of Variation		6.5%
Sample Size		4445
Percentiles		
Millimeters		Inches
549.00	1st	21.61
559.00	2nd	22.01
565.70	3rd	22.27
575.10	5th	22.64
590.00	10th	23.23
600.20	15th	23.63
608.20	20th	23.94
615.10	25th	24.22
621.20	30th	24.46
626.90	35th	24.68
632.20	40th	24.89
637.30	45th	25.09
642.30	50th	25.29
647.40	55th	25.49
652.50	60th	25.69
657.80	65th	25.90
663.40	70th	26.12
669.50	75th	26.36
676.60	80th	26.64
684.90	85th	26.96
696.10	90th	27.41
714.10	95th	28.11
727.10	97th	28.63
737.60	98th	29.04
755.80	99th	29.76

Females		
Millimeters		Inches
609.00	Mean	23.98
2.10	SE(Mean)	0.08
38.40	SD(Mean)	1.51
1.47	SE(SD)	0.06
482.00	Minimum	18.98
763.00	Maximum	30.04
Symmetry-Veta I		0.60
Kurtosis-Veta II		-0.80
Coeff. of Variation		6.3%
Sample Size		2886
Percentiles		
Millimeters		Inches
521.60	1st	20.54
531.60	2nd	20.93
538.00	3rd	21.18
546.90	5th	21.53
560.60	10th	22.07
569.90	15th	22.44
577.30	20th	22.73
583.70	25th	22.98
589.40	30th	23.20
594.70	35th	23.41
599.70	40th	23.61
604.60	45th	23.80
609.40	50th	23.99
614.20	55th	24.18
619.10	60th	24.37
624.20	65th	24.57
629.50	70th	24.78
635.40	75th	25.02
641.90	80th	25.27
649.60	85th	25.57
659.50	90th	25.96
674.40	95th	26.55
684.40	97th	26.94
692.00	98th	27.24
704.20	99th	27.72

(27) Crotch Length, Posterior (Omphalion)

The surface distance from the crotch at the inner thigh landmark to the back of the waist at the level of the center of the navel (omphalion) is measured with a tape. The tape passes between the buttocks to the back of the waist. The subject stands with the left foot on a platform so that the knee is flexed.





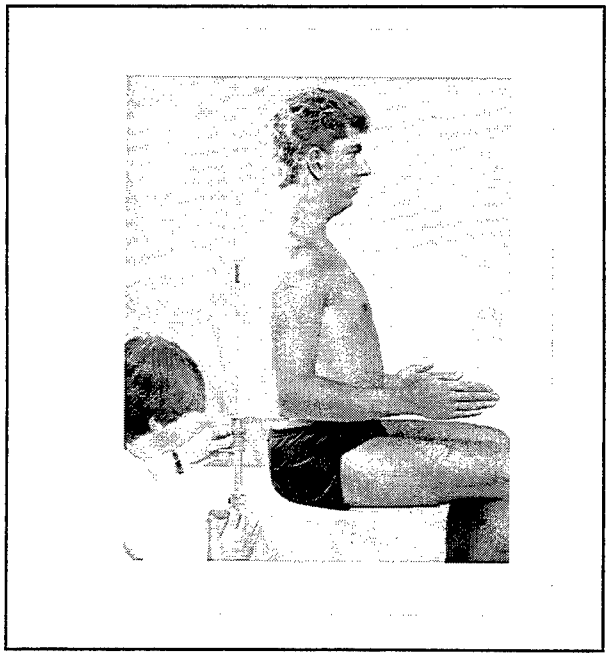
Crotch Length, Posterior (Omphalion)

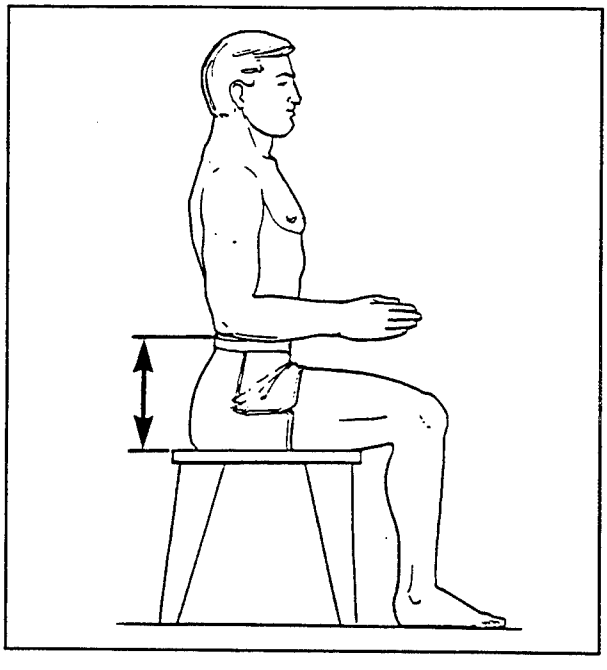
Males		
Millimeters		Inches
317.00	Mean	12.48
1.30	SE(Mean)	0.05
24.60	SD(Mean)	0.97
0.91	SE(SD)	0.04
225.00	Minimum	8.86
403.00	Maximum	15.87
Symmetry-Veta I		0.60
Kurtosis-Veta II		-0.20
Coeff. of Variation		7.8%
Sample Size		4445
Percentiles		
Millimeters		Inches
261.40	1st	10.29
267.50	2nd	10.53
271.50	3rd	10.69
277.20	5th	10.91
286.00	10th	11.26
292.10	15th	11.50
296.90	20th	11.69
301.00	25th	11.85
304.80	30th	12.00
308.20	35th	12.13
311.50	40th	12.26
314.60	45th	12.39
317.70	50th	12.51
320.80	55th	12.63
323.90	60th	12.75
327.20	65th	12.88
330.60	70th	13.02
334.30	75th	13.16
338.40	80th	13.32
343.30	85th	13.52
349.50	90th	13.76
359.00	95th	14.13
365.40	97th	14.39
370.30	98th	14.58
378.30	99th	14.89

Females		
Millimeters		Inches
307.00	Mean	12.09
1.30	SE(Mean)	0.05
24.70	SD(Mean)	0.97
0.94	SE(SD)	0.04
207.00	Minimum	8.15
413.00	Maximum	16.26
Symmetry-Veta I		1.70
Kurtosis-Veta II		3.50
Coeff. of Variation		8.0%
Sample Size		2886
Percentiles		
Millimeters		Inches
250.80	1st	9.87
257.70	2nd	10.15
262.10	3rd	10.32
267.90	5th	10.55
276.60	10th	10.89
282.50	15th	11.12
287.00	20th	11.30
291.00	25th	11.46
294.50	30th	11.59
297.70	35th	11.72
300.80	40th	11.84
303.80	45th	11.96
306.80	50th	12.08
309.70	55th	12.19
312.80	60th	12.31
316.00	65th	12.44
319.40	70th	12.57
323.10	75th	12.72
327.40	80th	12.89
332.50	85th	13.09
339.20	90th	13.35
349.80	95th	13.77
357.10	97th	14.06
362.80	98th	14.28
372.30	99th	14.66

(28) Elbow Rest Height

The vertical distance between a sitting surface and the olecranon landmark on the bottom of the flexed right elbow is measured with an anthropometer. The subject sits erect looking straight ahead. The shoulders and upper arms are relaxed and the forearms and hands are extended forward horizontally with the palms facing each other. The measurement is taken at the maximum point of quiet respiration.





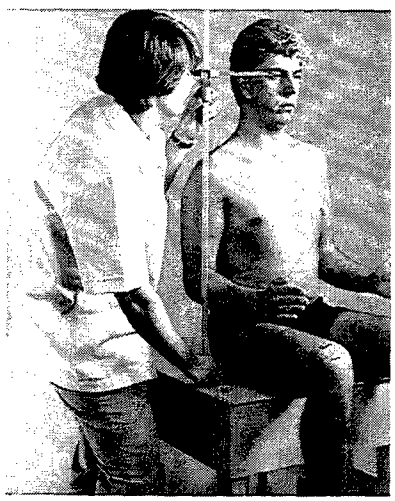
Elbow Rest Height

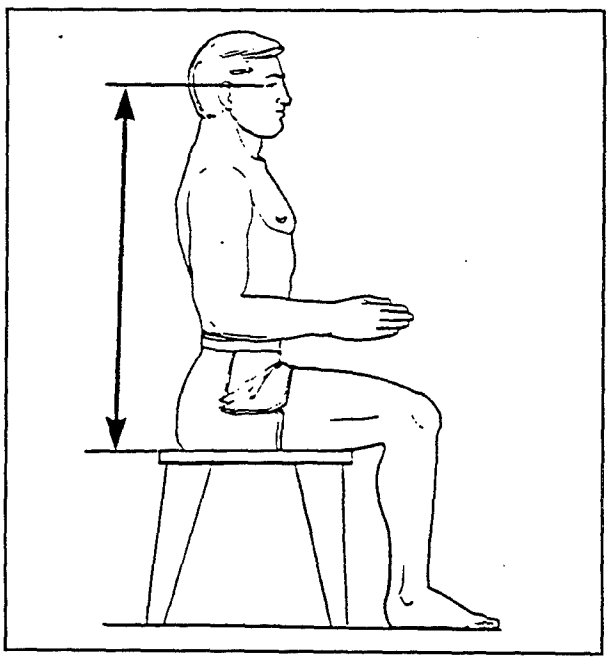
Males		
Millimeters		Inches
233.00	Mean	9.17
1.40	SE(Mean)	0.06
26.00	SD(Mean)	1.02
0.96	SE(SD)	0.04
128.00	Minimum	5.04
319.00	Maximum	12.56
Symmetry-Veta I		-2.00
Kurtosis-Veta II		1.60
Coeff. of Variation		11.2%
Sample Size		4445
Percentiles		
Millimeters		Inches
168.70	1st	6.64
176.40	2nd	6.94
181.50	3rd	7.15
188.40	5th	7.42
199.10	10th	7.84
206.30	15th	8.12
211.80	20th	8.34
216.50	25th	8.52
220.70	30th	8.69
224.40	35th	8.83
227.90	40th	8.97
231.20	45th	9.10
234.50	50th	9.23
237.60	55th	9.35
240.80	60th	9.48
244.00	65th	9.61
247.40	70th	9.74
251.00	75th	9.88
254.90	80th	10.04
259.50	85th	10.22
265.40	90th	10.45
274.30	95th	10.80
280.50	97th	11.04
285.30	98th	11.23
293.40	99th	11.55

Females		
Millimeters		Inches
225.00	Mean	8.86
1.40	SE(Mean)	0.06
25.60	SD(Mean)	1.01
0.98	SE(SD)	0.04
129.00	Minimum	5.08
302.00	Maximum	11.89
Symmetry-Veta I		-1.50
Kurtosis-Veta II		-0.30
Coeff. of Variation		11.4%
Sample Size		2888
Percentiles		
Millimeters		Inches
163.30	1st	6.43
170.20	2nd	6.70
174.80	3rd	6.88
181.20	5th	7.13
191.40	10th	7.54
198.30	15th	7.81
203.70	20th	8.02
208.30	25th	8.20
212.40	30th	8.36
216.10	35th	8.51
219.60	40th	8.65
222.90	45th	8.78
226.20	50th	8.91
229.40	55th	9.03
232.50	60th	9.15
235.80	65th	9.28
239.20	70th	9.42
242.80	75th	9.56
246.80	80th	9.72
251.50	85th	9.90
257.40	90th	10.13
266.30	95th	10.48
272.50	97th	10.73
277.20	98th	10.91
285.20	99th	11.23

(29) Eye Height, Sitting

The vertical distance between a sitting surface and the ectocanthus landmark on the outer corner of the right eye is measured with an anthropometer. The subject sits erect with the head in the Frankfort plane. The shoulders and upper arms are relaxed and the forearms and hands are extended forward horizontally with the palms facing each other. The thighs are parallel and the knees are flexed 90 degrees with the feet in line with the thighs. The measurement is taken at the maximum point of quiet respiration.





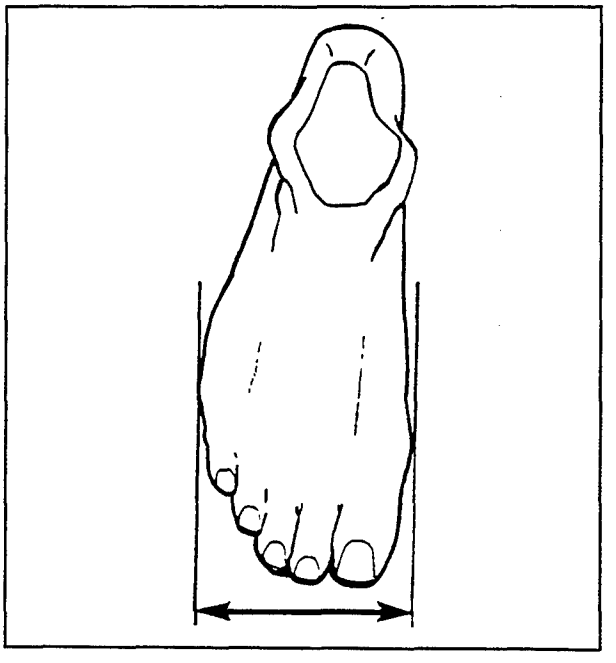
Eye Height, Sitting

Males		
Millimeters		Inches
794.00	Mean	31.26
1.80	SE(Mean)	0.07
33.60	SD(Mean)	1.32
1.24	SE(SD)	0.05
662.00	Minimum	26.06
915.00	Maximum	36.02
Symmetry-Veta I		0.00
Kurtosis-Veta II		0.20
Coeff. of Variation		4.2%
Sample Size		4445
Percentiles		
Millimeters		Inches
715.70	1st	28.18
724.80	2nd	28.54
730.60	3rd	28.76
738.60	5th	29.08
751.00	10th	29.57
759.40	15th	29.90
766.10	20th	30.16
771.80	25th	30.39
776.90	30th	30.59
781.60	35th	30.77
786.10	40th	30.95
790.40	45th	31.12
794.70	50th	31.29
798.90	55th	31.45
803.20	60th	31.62
807.60	65th	31.80
812.30	70th	31.98
817.30	75th	32.18
822.90	80th	32.40
829.40	85th	32.65
837.60	90th	32.98
849.90	95th	33.46
858.00	97th	33.78
864.00	98th	34.02
873.70	99th	34.40

Females		
Millimeters		Inches
743.00	Mean	29.25
1.70	SE(Mean)	0.07
31.90	SD(Mean)	1.26
1.22	SE(SD)	0.05
636.00	Minimum	25.04
864.00	Maximum	34.02
Symmetry-Veta I		-0.20
Kurtosis-Veta II		0.00
Coeff. of Variation		4.3%
Sample Size		2888
Percentiles		
Millimeters		Inches
667.80	1st	26.29
676.50	2nd	26.63
682.10	3rd	26.85
689.80	5th	27.16
701.80	10th	27.63
709.80	15th	27.94
716.20	20th	28.20
721.70	25th	28.41
726.60	30th	28.61
731.10	35th	28.78
735.30	40th	28.95
739.40	45th	29.11
743.40	50th	29.27
747.40	55th	29.43
751.50	60th	29.59
755.60	65th	29.75
760.00	70th	29.92
764.70	75th	30.11
770.00	80th	30.31
776.10	85th	30.56
783.80	90th	30.86
795.30	95th	31.31
803.00	97th	31.61
808.60	98th	31.83
817.80	99th	32.20

(30) Foot Breadth, Horizontal

The maximum breadth of the right foot is measured on a footbox scale. The subject stands with each foot in a footbox and the weight distributed equally on both feet. The heel of the right foot lightly touches the back of the box, and the side of the foot at the fifth-metatarsophalangeal-protrusion landmark lightly touches the side of the box. The medial side of the foot is parallel to the long axis of the box. A block is placed against the landmark at the first metatarsophalangeal protrusion to establish the measurement on the scale.



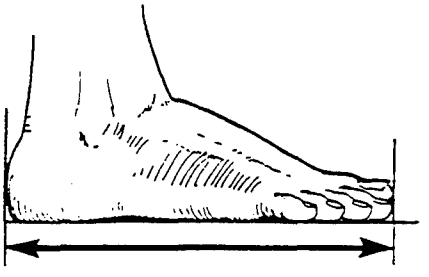
Foot Breadth, Horizontal

Males		
Millimeters		Inches
100.00	Mean	3.94
0.30	SE(Mean)	0.01
5.20	SD(Mean)	0.20
0.19	SE(SD)	0.01
80.00	Minimum	3.15
123.00	Maximum	4.84
Symmetry-Veta I		2.40
Kurtosis-Veta II		4.10
Coeff. of Variation		5.2%
Sample Size		4432
Percentiles		
Millimeters		Inches
89.50	1st	3.52
90.70	2nd	3.57
91.60	3rd	3.61
92.70	5th	3.65
94.50	10th	3.72
95.70	15th	3.77
96.60	20th	3.80
97.50	25th	3.84
98.20	30th	3.87
98.90	35th	3.89
99.50	40th	3.92
100.10	45th	3.94
100.80	50th	3.97
101.40	55th	3.99
102.00	60th	4.02
102.70	65th	4.04
103.40	70th	4.07
104.20	75th	4.10
105.00	80th	4.13
106.10	85th	4.18
107.50	90th	4.23
109.70	95th	4.32
111.30	97th	4.38
112.50	98th	4.43
114.70	99th	4.52

Females		
Millimeters		Inches
89.00	Mean	3.50
0.30	SE(Mean)	0.01
4.80	SD(Mean)	0.19
0.18	SE(SD)	0.01
74.00	Minimum	2.91
107.00	Maximum	4.21
Symmetry-Veta I		1.40
Kurtosis-Veta II		1.20
Coeff. of Variation		5.4%
Sample Size		2879
Percentiles		
Millimeters		Inches
78.90	1st	3.11
80.10	2nd	3.15
80.90	3rd	3.19
81.90	5th	3.22
83.60	10th	3.29
84.70	15th	3.33
85.60	20th	3.37
86.30	25th	3.40
87.00	30th	3.43
87.60	35th	3.45
88.20	40th	3.47
88.80	45th	3.50
89.40	50th	3.52
90.00	55th	3.54
90.60	60th	3.57
91.20	65th	3.59
91.80	70th	3.61
92.60	75th	3.65
93.40	80th	3.68
94.40	85th	3.72
95.70	90th	3.77
97.70	95th	3.85
99.10	97th	3.90
100.10	98th	3.94
101.90	99th	4.01

(31) Foot Length

The maximum length of the right foot is measured on a footbox scale. The subject stands with each foot in a footbox and the weight distributed equally on both feet. The heel of the right foot lightly touches the back of the box, and the side of the foot at the fifth-metatarsophalangeal-protrusion landmark lightly touches the side of the box. The medial side of the foot is parallel to the long axis of the box. A block is placed against the tip of the longest toe to establish the measurement on the scale.



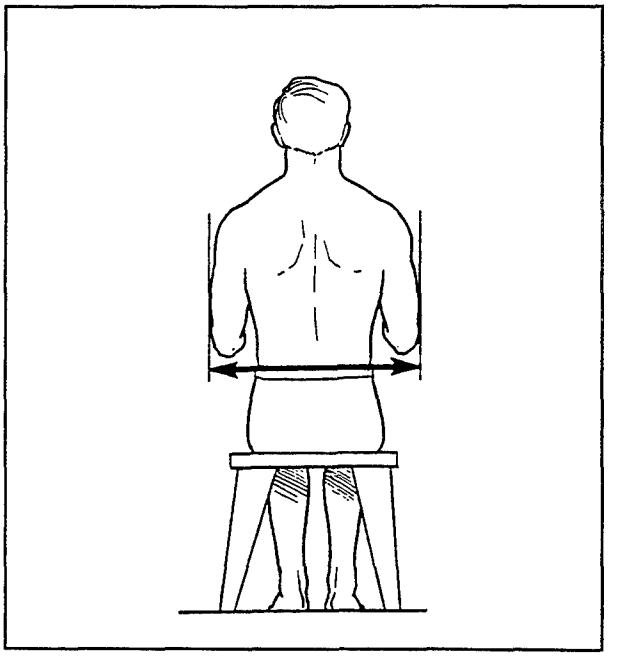
Foot Length

Males		
Millimeters		Inches
269.00	Mean	10.59
0.70	SE(Mean)	0.03
12.80	SD(Mean)	0.50
0.47	SE(SD)	0.02
223.00	Minimum	8.78
318.00	Maximum	12.52
Symmetry-Veta I		0.80
Kurtosis-Veta II		-0.10
Coeff. of Variation		4.8%
Sample Size		4433
Percentiles		
Millimeters		Inches
239.20	1st	9.42
243.40	2nd	9.58
245.80	3rd	9.68
249.00	5th	9.80
253.50	10th	9.98
256.50	15th	10.10
258.80	20th	10.19
260.90	25th	10.27
262.70	30th	10.34
264.40	35th	10.41
266.00	40th	10.47
267.60	45th	10.54
269.20	50th	10.60
270.90	55th	10.67
272.60	60th	10.73
274.30	65th	10.80
276.20	70th	10.87
278.30	75th	10.96
280.60	80th	11.05
283.40	85th	11.16
286.80	90th	11.29
291.90	95th	11.49
295.10	97th	11.62
297.30	98th	11.70
300.60	99th	11.83

Females		
Millimeters		Inches
243.00	Mean	9.57
0.60	SE(Mean)	0.02
11.90	SD(Mean)	0.47
0.46	SE(SD)	0.02
203.00	Minimum	7.99
290.00	Maximum	11.42
Symmetry-Veta I		0.10
Kurtosis-Veta II		-1.10
Coeff. of Variation		4.9%
Sample Size		2879
Percentiles		
Millimeters		Inches
216.20	1st	8.51
219.10	2nd	8.63
221.00	3rd	8.70
223.70	5th	8.81
227.90	10th	8.97
230.80	15th	9.09
233.20	20th	9.18
235.20	25th	9.26
237.00	30th	9.33
238.70	35th	9.40
240.40	40th	9.46
241.90	45th	9.52
243.50	50th	9.59
245.00	55th	9.65
246.60	60th	9.71
248.20	65th	9.77
249.90	70th	9.84
251.70	75th	9.91
253.80	80th	9.99
256.10	85th	10.08
259.10	90th	10.20
263.30	95th	10.37
266.00	97th	10.47
268.00	98th	10.55
271.00	99th	10.67

(32) Forearm-Forearm Breadth

The maximum horizontal distance across the upper body between the outer sides of the forearms is measured with a beam caliper. The subject sits erect looking straight ahead. The shoulders and upper arms are relaxed and the forearms and hands are extended forward horizontally with the palms facing each other. The measurement is taken at the maximum point of quiet respiration.



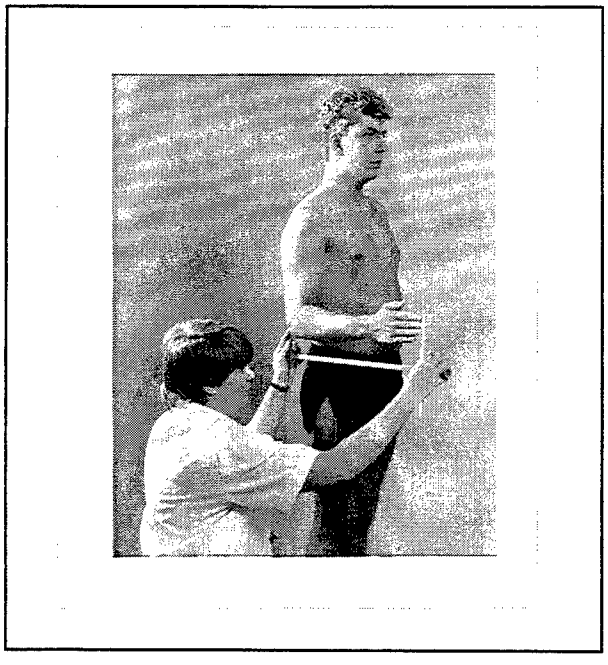
Forearm-Forearm Breadth

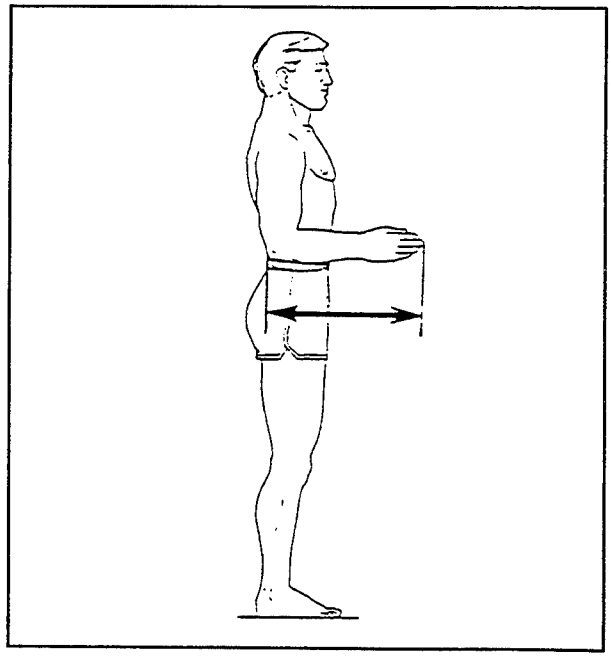
Males		
Millimeters		Inches
549.00	Mean	21.61
2.20	SE(Mean)	0.09
42.40	SD(Mean)	1.67
1.57	SE(SD)	0.06
399.00	Minimum	15.71
725.00	Maximum	28.54
Symmetry-Veta I		1.90
Kurtosis-Veta II		1.40
Coeff. of Variation		7.7%
Sample Size		4445
Percentiles		
Millimeters		Inches
455.90	1st	17.95
465.60	2nd	18.33
472.10	3rd	18.59
481.20	5th	18.94
495.80	10th	19.52
505.80	15th	19.91
513.90	20th	20.23
520.80	25th	20.50
527.10	30th	20.75
532.80	35th	20.98
538.30	40th	21.19
543.60	45th	21.40
548.80	50th	21.61
554.10	55th	21.81
559.40	60th	22.02
564.90	65th	22.24
570.80	70th	22.47
577.20	75th	22.72
584.50	80th	23.01
593.00	85th	23.35
604.10	90th	23.78
621.50	95th	24.47
633.50	97th	24.94
642.90	98th	25.31
658.60	99th	25.93

Females		
Millimeters		Inches
470.00	Mean	18.50
1.80	SE(Mean)	0.07
34.10	SD(Mean)	1.34
1.30	SE(SD)	0.05
371.00	Minimum	14.61
609.00	Maximum	23.98
Symmetry-Veta I		3.60
Kurtosis-Veta II		4.50
Coeff. of Variation		7.3%
Sample Size		2888
Percentiles		
Millimeters		Inches
398.10	1st	15.67
404.50	2nd	15.93
409.20	3rd	16.11
416.10	5th	16.38
427.50	10th	16.83
435.50	15th	17.15
441.90	20th	17.40
447.40	25th	17.61
452.30	30th	17.81
456.80	35th	17.98
461.00	40th	18.15
465.10	45th	18.31
469.20	50th	18.47
473.20	55th	18.63
477.20	60th	18.79
481.50	65th	18.96
486.00	70th	19.13
491.00	75th	19.33
496.80	80th	19.56
503.70	85th	19.83
513.20	90th	20.20
529.30	95th	20.84
541.50	97th	21.32
551.50	98th	21.71
569.70	99th	22.43

(33) Forearm-Hand Length

The horizontal distance between the back of the tip of the right elbow and the tip of the right middle finger is measured with a beam caliper. The subject stands erect with the upper arms hanging at the sides and the right elbow flexed 90 degrees. The hand is held out straight with the palm facing inward.





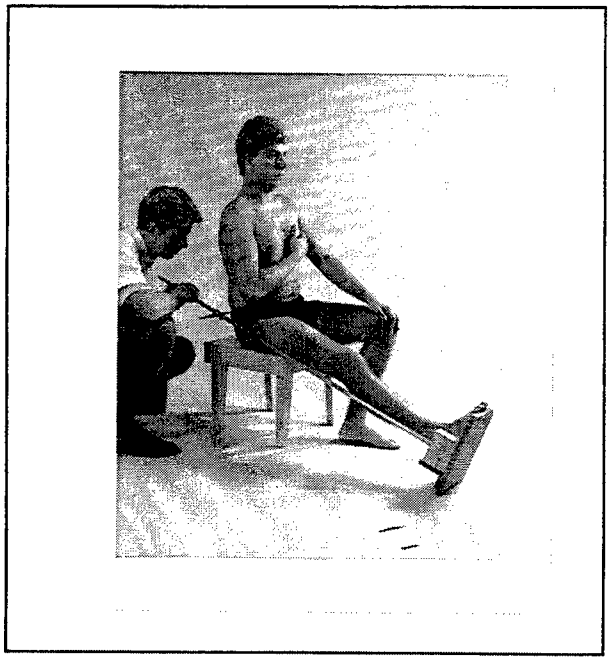
Forearm-Hand Length

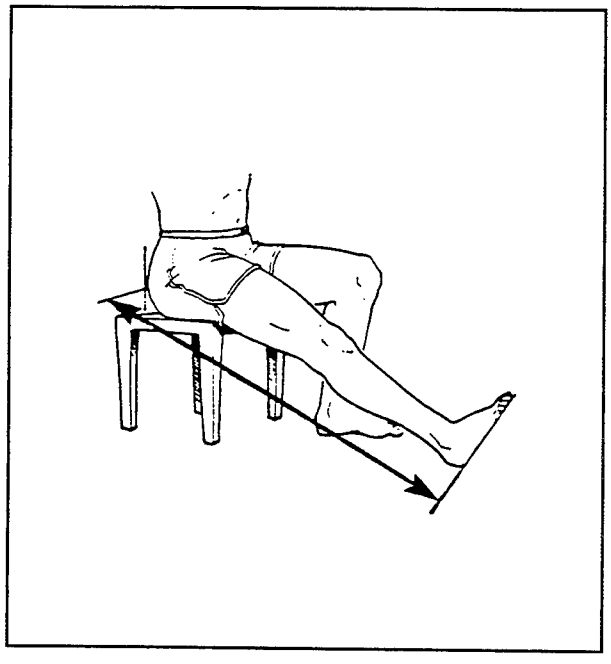
Males		
Millimeters		Inches
482.00	Mean	18.98
1.20	SE(Mean)	0.05
22.20	SD(Mean)	0.87
0.82	SE(SD)	0.03
386.00	Minimum	15.20
570.00	Maximum	22.44
Symmetry-Veta I		1.00
Kurtosis-Veta II		1.70
Coeff. of Variation		4.6%
Sample Size		4447
Percentiles		
Millimeters		Inches
432.80	1st	17.04
438.50	2nd	17.26
442.10	3rd	17.41
447.10	5th	17.60
454.80	10th	17.91
460.10	15th	18.11
464.20	20th	18.28
467.80	25th	18.42
471.10	30th	18.55
474.10	35th	18.67
476.90	40th	18.78
479.70	45th	18.89
482.40	50th	18.99
485.20	55th	19.10
488.00	60th	19.21
490.90	65th	19.33
494.00	70th	19.45
497.40	75th	19.58
501.30	80th	19.74
505.70	85th	19.91
511.50	90th	20.14
520.40	95th	20.49
526.30	97th	20.72
530.90	98th	20.90
538.20	99th	21.19

Females		
Millimeters		Inches
440.00	Mean	17.32
1.20	SE(Mean)	0.05
22.30	SD(Mean)	0.88
0.85	SE(SD)	0.03
373.00	Minimum	14.69
546.00	Maximum	21.50
Symmetry-Veta I		2.90
Kurtosis-Veta II		1.50
Coeff. of Variation		5.1%
Sample Size		2888
Percentiles		
Millimeters		Inches
394.60	1st	15.54
398.90	2nd	15.70
401.70	3rd	15.81
405.80	5th	15.98
412.40	10th	16.24
417.10	15th	16.42
421.00	20th	16.57
424.40	25th	16.71
427.50	30th	16.83
430.50	35th	16.95
433.30	40th	17.06
436.10	45th	17.17
438.90	50th	17.28
441.80	55th	17.39
444.70	60th	17.51
447.70	65th	17.63
451.00	70th	17.76
454.60	75th	17.90
458.70	80th	18.06
463.50	85th	18.25
469.70	90th	18.49
479.10	95th	18.86
485.40	97th	19.11
490.20	98th	19.30
497.80	99th	19.60

(34) Functional Leg Length

The straight-line distance between the plane of the bottom of the right foot with the leg extended and the back of the body of a seated subject is measured with an anthropometer passing over the trochanter landmark on the side of the hip. The subject sits erect on a stool 40.8 cm high. The right leg is extended and the foot is on the base plate of the anthropometer, which rests on the floor. The measurement is made from the footrest surface of the base plate.





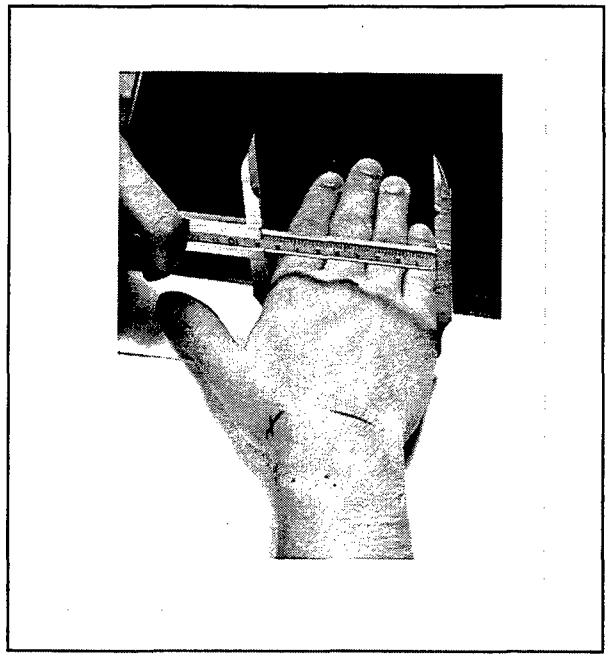
Functional Leg Length

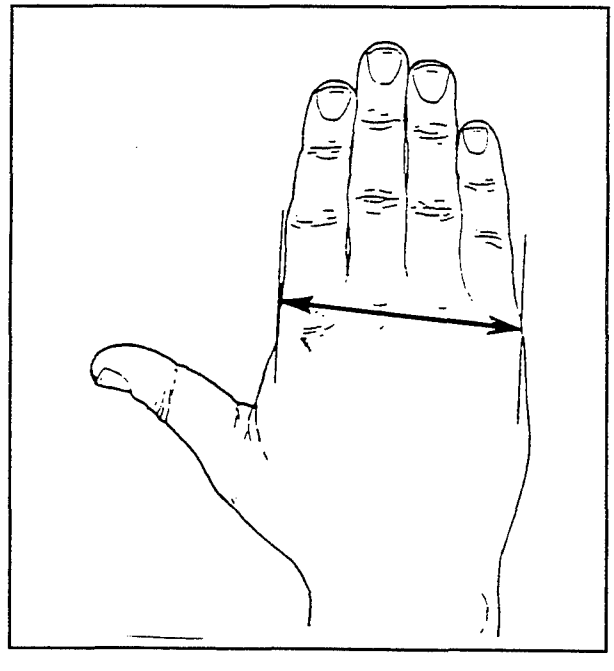
Males		
Millimeters		Inches
1082.00	Mean	42.60
2.60	SE(Mean)	0.10
50.10	SD(Mean)	1.97
1.85	SE(SD)	0.07
867.00	Minimum	34.13
1274.00	Maximum	50.16
Symmetry-Veta I		0.60
Kurtosis-Veta II		1.70
Coeff. of Variation		4.6%
Sample Size		4444
Percentiles		
Millimeters		Inches
967.30	1st	38.08
980.90	2nd	38.62
989.40	3rd	38.95
1001.00	5th	39.41
1018.70	10th	40.11
1030.70	15th	40.58
1040.10	20th	40.95
1048.30	25th	41.27
1055.60	30th	41.56
1062.40	35th	41.83
1068.90	40th	42.08
1075.10	45th	42.33
1081.30	50th	42.57
1087.60	55th	42.82
1093.90	60th	43.07
1100.50	65th	43.33
1107.50	70th	43.60
1115.10	75th	43.90
1123.80	80th	44.24
1133.90	85th	44.64
1147.00	90th	45.16
1166.90	95th	45.94
1180.30	97th	46.47
1190.30	98th	46.86
1206.60	99th	47.50

Females		
Millimeters		Inches
1009.00	Mean	39.72
2.60	SE(Mean)	0.10
48.30	SD(Mean)	1.90
1.85	SE(SD)	0.07
857.00	Minimum	33.74
1205.00	Maximum	47.44
Symmetry-Veta I		1.20
Kurtosis-Veta II		-0.30
Coeff. of Variation		4.8%
Sample Size		2886
Percentiles		
Millimeters		Inches
902.80	1st	35.54
913.60	2nd	35.97
920.90	3rd	36.26
931.10	5th	36.66
947.40	10th	37.30
958.80	15th	37.75
968.00	20th	38.11
975.90	25th	38.42
983.10	30th	38.70
989.80	35th	38.97
996.10	40th	39.22
1002.30	45th	39.46
1008.40	50th	39.70
1014.50	55th	39.94
1020.70	60th	40.19
1027.20	65th	40.44
1034.00	70th	40.71
1041.50	75th	41.00
1049.80	80th	41.33
1059.60	85th	41.72
1072.10	90th	42.21
1091.20	95th	42.96
1103.90	97th	43.46
1113.60	98th	43.84
1129.30	99th	44.46

(35) Hand Breadth

The breadth of the right hand between the landmarks at metacarpale II and metacarpale V is measured with a sliding caliper. The subject places the palm on a table, the fingers together and the thumb abducted. The middle finger is parallel to the long axis of the forearm. The two distal phalanges of the fingers lie on a flat surface 8 mm higher than the table.





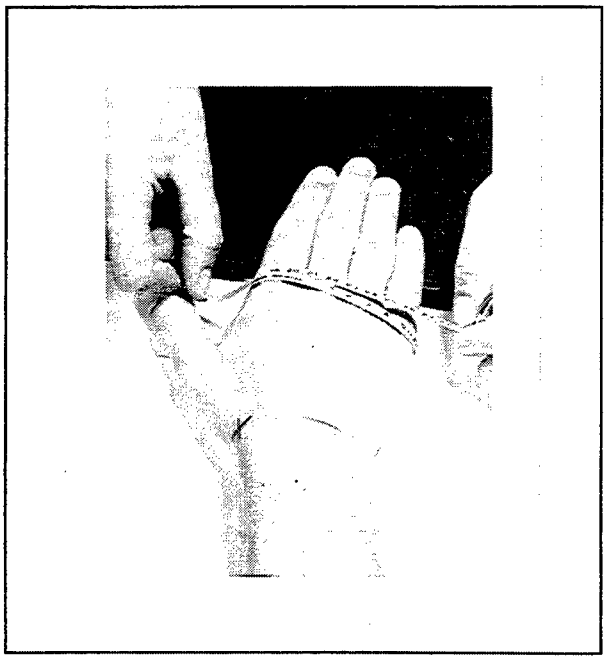
Hand Breadth

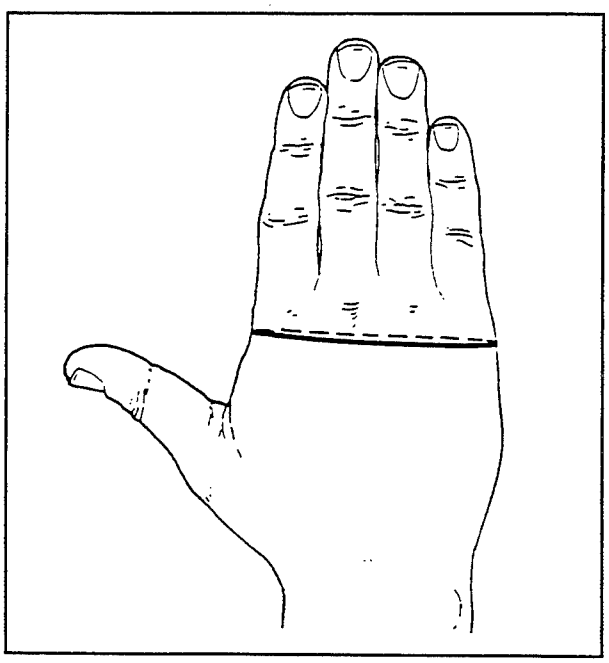
Males		
Millimeters		Inches
90.00	Mean	3.54
0.20	SE(Mean)	0.01
4.10	SD(Mean)	0.16
0.15	SE(SD)	0.01
75.00	Minimum	2.95
109.00	Maximum	4.29
Symmetry-Veta I		0.70
Kurtosis-Veta II		0.10
Coeff. of Variation		4.6%
Sample Size		4444
Percentiles		
Millimeters		Inches
80.90	1st	3.19
82.20	2nd	3.24
82.90	3rd	3.26
83.90	5th	3.30
85.30	10th	3.36
86.20	15th	3.39
86.90	20th	3.42
87.60	25th	3.45
88.20	30th	3.47
88.70	35th	3.49
89.20	40th	3.51
89.70	45th	3.53
90.30	50th	3.56
90.80	55th	3.57
91.30	60th	3.59
91.90	65th	3.62
92.50	70th	3.64
93.10	75th	3.67
93.90	80th	3.70
94.80	85th	3.73
95.80	90th	3.77
97.40	95th	3.83
98.40	97th	3.87
99.10	98th	3.90
100.10	99th	3.94

Females		
Millimeters		Inches
79.00	Mean	3.11
0.20	SE(Mean)	0.01
3.80	SD(Mean)	0.15
0.15	SE(SD)	0.01
66.00	Minimum	2.60
98.00	Maximum	3.86
Symmetry-Veta I		1.90
Kurtosis-Veta II		3.10
Coeff. of Variation		4.8%
Sample Size		2888
Percentiles		
Millimeters		Inches
70.70	1st	2.78
71.70	2nd	2.82
72.30	3rd	2.85
73.20	5th	2.88
74.50	10th	2.93
75.40	15th	2.97
76.10	20th	3.00
76.70	25th	3.02
77.20	30th	3.04
77.70	35th	3.06
78.20	40th	3.08
78.60	45th	3.09
79.10	50th	3.11
79.50	55th	3.13
80.00	60th	3.15
80.50	65th	3.17
81.00	70th	3.19
81.60	75th	3.21
82.20	80th	3.24
82.90	85th	3.26
83.90	90th	3.30
85.40	95th	3.36
86.40	97th	3.40
87.20	98th	3.43
88.50	99th	3.48

(36) Hand Circumference

The circumference of the right hand is measured with a tape passing over the landmarks at metacarpale II and metacarpale V. The subject places the palm on a table, the fingers together and the thumb abducted. The middle finger is parallel to the long axis of the forearm. The two distal phalanges of the fingers lie on a flat surface 8 mm higher than the table.





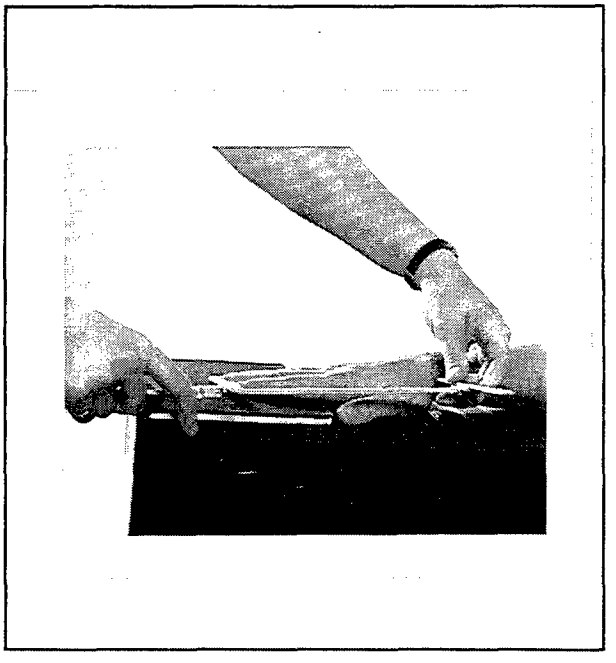
Hand Circumference

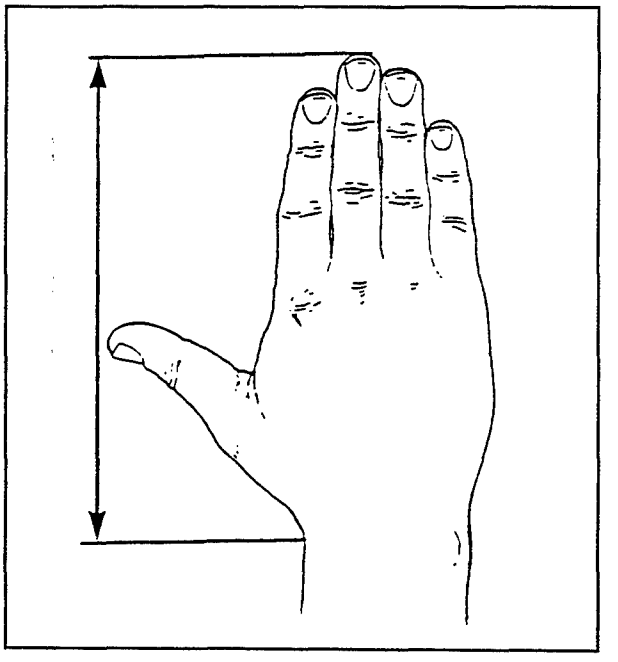
Males		
Millimeters		Inches
213.00	Mean	8.39
0.50	SE(Mean)	0.02
9.40	SD(Mean)	0.37
0.35	SE(SD)	0.01
179.00	Minimum	7.05
255.00	Maximum	10.04
Symmetry-Veta I		1.00
Kurtosis-Veta II		1.00
Coeff. of Variation		4.4%
Sample Size		4444
Percentiles		
Millimeters		Inches
192.50	1st	7.58
195.10	2nd	7.68
196.70	3rd	7.74
198.90	5th	7.83
202.10	10th	7.96
204.30	15th	8.04
206.00	20th	8.11
207.50	25th	8.17
208.90	30th	8.22
210.10	35th	8.27
211.30	40th	8.32
212.50	45th	8.37
213.60	50th	8.41
214.80	55th	8.46
216.00	60th	8.50
217.30	65th	8.56
218.60	70th	8.61
220.00	75th	8.66
221.70	80th	8.73
223.60	85th	8.80
226.10	90th	8.90
229.80	95th	9.05
232.20	97th	9.14
234.00	98th	9.21
236.80	99th	9.32

Females		
Millimeters		Inches
185.00	Mean	7.28
0.50	SE(Mean)	0.02
8.50	SD(Mean)	0.33
0.32	SE(SD)	0.01
158.00	Minimum	6.22
230.00	Maximum	9.06
Symmetry-Veta I		2.00
Kurtosis-Veta II		2.70
Coeff. of Variation		4.6%
Sample Size		2888
Percentiles		
Millimeters		Inches
167.00	1st	6.57
169.00	2nd	6.65
170.20	3rd	6.70
172.00	5th	6.77
174.80	10th	6.88
176.80	15th	6.96
178.30	20th	7.02
179.70	25th	7.07
181.00	30th	7.13
182.10	35th	7.17
183.20	40th	7.21
184.30	45th	7.26
185.40	50th	7.30
186.40	55th	7.34
187.50	60th	7.38
188.70	65th	7.43
189.90	70th	7.48
191.20	75th	7.53
192.70	80th	7.59
194.50	85th	7.66
196.70	90th	7.74
200.20	95th	7.88
202.50	97th	7.97
204.20	98th	8.04
207.00	99th	8.15

(37) Hand Length

The length of the right hand between the stylion landmark on the wrist and the tip of the middle finger is measured with a Poech sliding caliper. The subject places the palm on a table, the fingers together, and the thumb abducted. The middle finger is parallel to the long axis of the forearm. The two distal phalanges of the fingers lie on a flat surface 8 mm higher than the table.





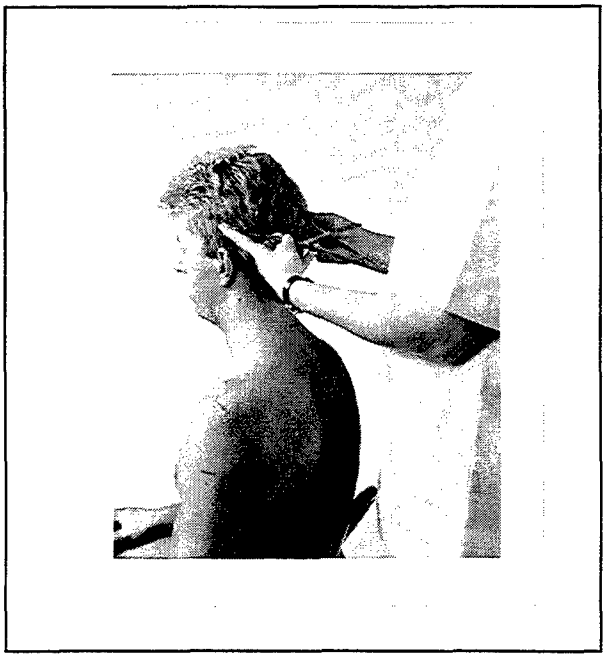
Hand Length

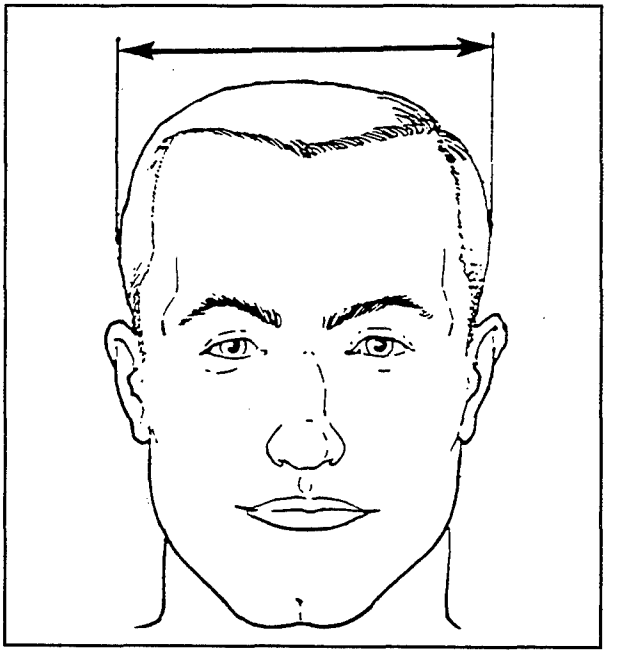
Males		
Millimeters		Inches
193.00	Mean	7.60
0.50	SE(Mean)	0.02
9.30	SD(Mean)	0.37
0.34	SE(SD)	0.01
160.00	Minimum	6.30
233.00	Maximum	9.17
Symmetry-Veta I		1.60
Kurtosis-Veta II		1.10
Coeff. of Variation		4.8%
Sample Size		4444
Percentiles		
Millimeters		Inches
172.00	1st	6.77
174.60	2nd	6.87
176.20	3rd	6.94
178.30	5th	7.02
181.50	10th	7.15
183.70	15th	7.23
185.40	20th	7.30
186.90	25th	7.36
188.20	30th	7.41
189.50	35th	7.46
190.70	40th	7.51
191.80	45th	7.55
193.00	50th	7.60
194.20	55th	7.65
195.40	60th	7.69
196.60	65th	7.74
198.00	70th	7.80
199.40	75th	7.85
201.10	80th	7.92
203.00	85th	7.99
205.50	90th	8.09
209.20	95th	8.24
211.60	97th	8.33
213.40	98th	8.40
216.20	99th	8.51

Females		
Millimeters		Inches
179.00	Mean	7.05
0.50	SE(Mean)	0.02
9.40	SD(Mean)	0.37
0.36	SE(SD)	0.01
149.00	Minimum	5.87
217.00	Maximum	8.54
Symmetry-Veta I		2.40
Kurtosis-Veta II		2.10
Coeff. of Variation		5.2%
Sample Size		2888
Percentiles		
Millimeters		Inches
158.50	1st	6.24
161.00	2nd	6.34
162.50	3rd	6.40
164.60	5th	6.48
167.70	10th	6.60
169.80	15th	6.69
171.40	20th	6.75
172.90	25th	6.81
174.20	30th	6.86
175.40	35th	6.91
176.50	40th	6.95
177.70	45th	7.00
178.80	50th	7.04
180.00	55th	7.09
181.10	60th	7.13
182.40	65th	7.18
183.70	70th	7.23
185.20	75th	7.29
186.80	80th	7.35
188.80	85th	7.43
191.50	90th	7.54
195.60	95th	7.70
198.40	97th	7.81
200.60	98th	7.90
204.10	99th	8.04

(38) Head Breadth

The maximum horizontal breadth of the head above the attachment of the ears is measured with a spreading caliper.





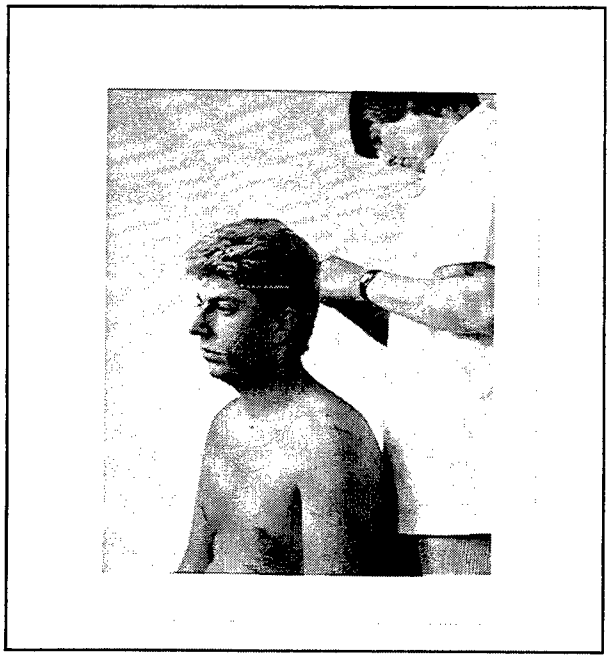
Head Breadth

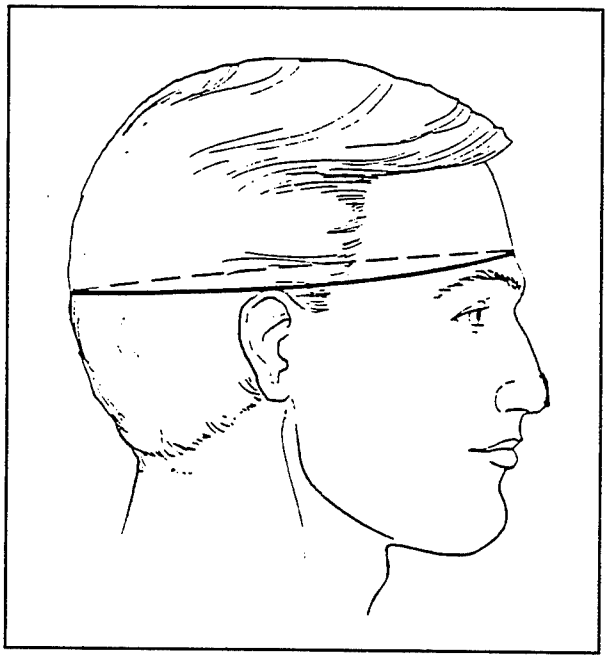
Males		
Millimeters		Inches
151.00	Mean	5.94
0.30	SE(Mean)	0.01
5.50	SD(Mean)	0.22
0.20	SE(SD)	0.01
128.00	Minimum	5.04
173.00	Maximum	6.81
Symmetry-Veta I		2.50
Kurtosis-Veta II		2.40
Coeff. of Variation		3.6%
Sample Size		4444
Percentiles		
Millimeters		Inches
139.30	1st	5.48
140.90	2nd	5.55
141.80	3rd	5.58
143.10	5th	5.63
145.00	10th	5.71
146.30	15th	5.76
147.20	20th	5.80
148.10	25th	5.83
148.80	30th	5.86
149.50	35th	5.89
150.20	40th	5.91
150.80	45th	5.94
151.50	50th	5.96
152.10	55th	5.99
152.80	60th	6.02
153.50	65th	6.04
154.20	70th	6.07
155.10	75th	6.11
156.00	80th	6.14
157.20	85th	6.19
158.70	90th	6.25
161.10	95th	6.34
162.80	97th	6.41
164.00	98th	6.46
166.10	99th	6.54

Females		
Millimeters		Inches
144.00	Mean	5.67
0.30	SE(Mean)	0.01
5.00	SD(Mean)	0.20
0.19	SE(SD)	0.01
126.00	Minimum	4.96
167.00	Maximum	6.57
Symmetry-Veta I		2.70
Kurtosis-Veta II		6.40
Coeff. of Variation		3.5%
Sample Size		2888
Percentiles		
Millimeters		Inches
133.30	1st	5.25
134.80	2nd	5.31
135.70	3rd	5.34
136.90	5th	5.39
138.60	10th	5.46
139.80	15th	5.50
140.70	20th	5.54
141.40	25th	5.57
142.10	30th	5.59
142.70	35th	5.62
143.30	40th	5.64
143.90	45th	5.67
144.50	50th	5.69
145.00	55th	5.71
145.60	60th	5.73
146.30	65th	5.76
146.90	70th	5.78
147.70	75th	5.81
148.60	80th	5.85
149.60	85th	5.89
151.10	90th	5.95
153.40	95th	6.04
155.00	97th	6.10
156.30	98th	6.15
158.60	99th	6.24

(39) Head Circumference

The maximum circumference of the head above the attachment of the ears to the head is measured with a tape passing just above the ridges of the eyebrows and around the back of the head.





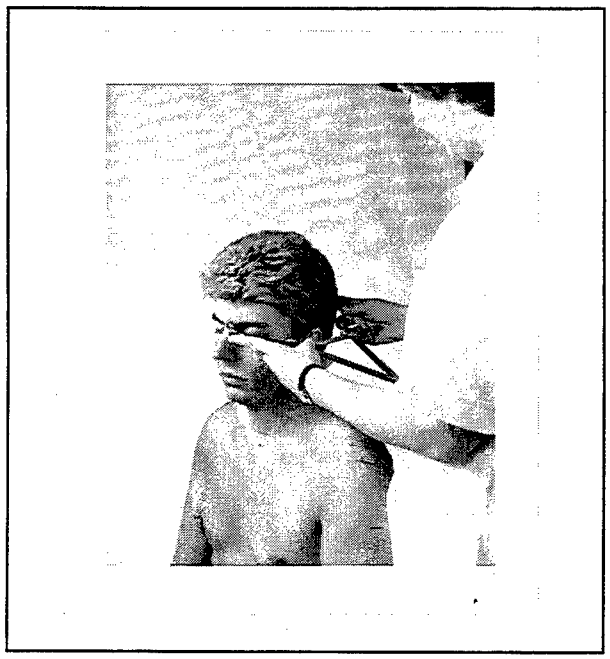
Head Circumference

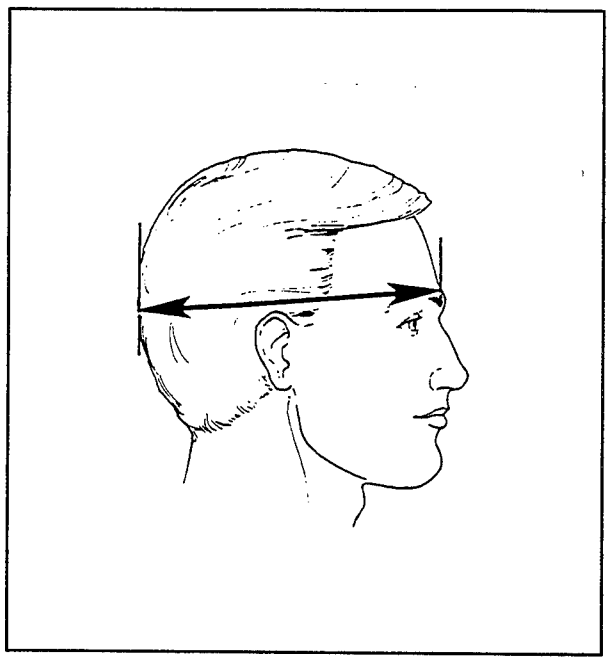
Males		
Millimeters		Inches
568.00	Mean	22.36
0.80	SE(Mean)	0.03
15.20	SD(Mean)	0.60
0.56	SE(SD)	0.02
514.00	Minimum	20.24
633.00	Maximum	24.92
Symmetry-Veta I		1.40
Kurtosis-Veta II		1.80
Coeff. of Variation		2.7%
Sample Size		4444
Percentiles		
Millimeters		Inches
533.40	1st	21.00
537.40	2nd	21.16
540.00	3rd	21.26
543.50	5th	21.40
549.00	10th	21.61
552.60	15th	21.76
555.50	20th	21.87
558.00	25th	21.97
560.20	30th	22.06
562.30	35th	22.14
564.20	40th	22.21
566.10	45th	22.29
568.00	50th	22.36
569.80	55th	22.43
571.70	60th	22.51
573.70	65th	22.59
575.80	70th	22.67
578.10	75th	22.76
580.70	80th	22.86
583.70	85th	22.98
587.70	90th	23.14
593.90	95th	23.38
598.20	97th	23.55
601.40	98th	23.68
606.90	99th	23.89

Females		
Millimeters		Inches
545.00	Mean	21.46
0.80	SE(Mean)	0.03
14.60	SD(Mean)	0.57
0.56	SE(SD)	0.02
502.00	Minimum	19.76
615.00	Maximum	24.21
Symmetry-Veta I		2.20
Kurtosis-Veta II		3.60
Coeff. of Variation		2.7%
Sample Size		2888
Percentiles		
Millimeters		Inches
512.50	1st	20.18
516.10	2nd	20.32
518.60	3rd	20.42
521.90	5th	20.55
527.10	10th	20.75
530.60	15th	20.89
533.40	20th	21.00
535.80	25th	21.09
537.90	30th	21.18
539.90	35th	21.26
541.80	40th	21.33
543.60	45th	21.40
545.30	50th	21.47
547.10	55th	21.54
548.90	60th	21.61
550.80	65th	21.69
552.80	70th	21.76
554.90	75th	21.85
557.40	80th	21.94
560.30	85th	22.06
564.10	90th	22.21
570.10	95th	22.44
574.30	97th	22.61
577.50	98th	22.74
583.10	99th	22.96

(40) Head Length

The distance from the glabella landmark between the browridges to the posterior point on the back of the head is measured with a spreading caliper.





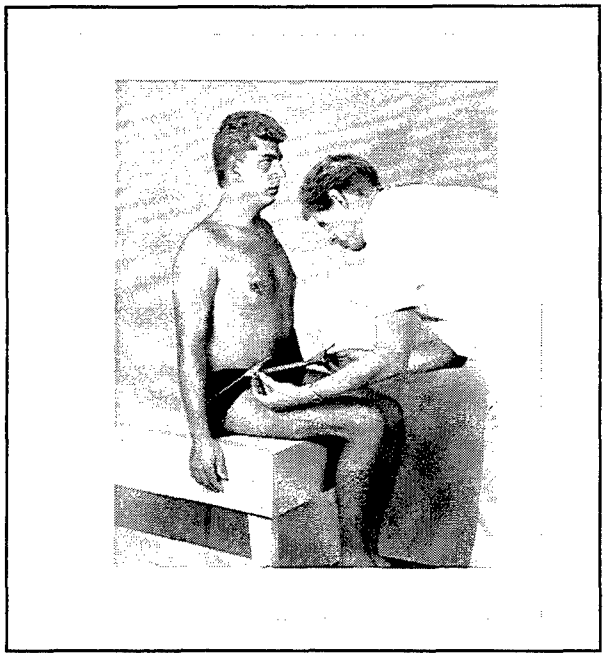
Head Length

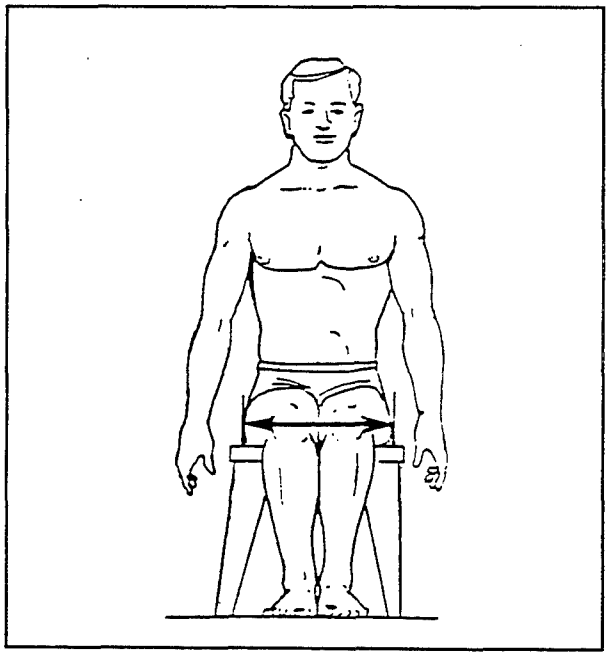
Males		
Millimeters		Inches
197.00	Mean	7.76
0.40	SE(Mean)	0.02
7.00	SD(Mean)	0.28
0.26	SE(SD)	0.01
165.00	Minimum	6.50
224.00	Maximum	8.82
Symmetry-Veta I		-0.30
Kurtosis-Veta II		-0.40
Coeff. of Variation		3.6%
Sample Size		4444
Percentiles		
Millimeters		Inches
180.50	1st	7.11
182.70	2nd	7.19
184.00	3rd	7.24
185.70	5th	7.31
188.30	10th	7.41
190.10	15th	7.48
191.50	20th	7.54
192.60	25th	7.58
193.70	30th	7.63
194.60	35th	7.66
195.50	40th	7.70
196.40	45th	7.73
197.30	50th	7.77
198.10	55th	7.80
199.00	60th	7.83
199.90	65th	7.87
200.80	70th	7.91
201.90	75th	7.95
203.00	80th	7.99
204.30	85th	8.04
206.00	90th	8.11
208.50	95th	8.21
210.20	97th	8.28
211.40	98th	8.32
213.30	99th	8.40

Females		
Millimeters		Inches
186.00	Mean	7.32
0.40	SE(Mean)	0.02
6.50	SD(Mean)	0.26
0.25	SE(SD)	0.01
158.00	Minimum	6.22
215.00	Maximum	8.46
Symmetry-Veta I		-0.90
Kurtosis-Veta II		0.80
Coeff. of Variation		3.5%
Sample Size		2888
Percentiles		
Millimeters		Inches
171.10	1st	6.74
172.90	2nd	6.81
174.00	3rd	6.85
175.70	5th	6.92
178.20	10th	7.02
179.80	15th	7.08
181.20	20th	7.13
182.30	25th	7.18
183.30	30th	7.22
184.20	35th	7.25
185.10	40th	7.29
185.90	45th	7.32
186.70	50th	7.35
187.50	55th	7.38
188.40	60th	7.42
189.20	65th	7.45
190.10	70th	7.48
191.00	75th	7.52
192.10	80th	7.56
193.30	85th	7.61
194.90	90th	7.67
197.30	95th	7.77
198.90	97th	7.83
200.10	98th	7.88
202.20	99th	7.96

(41) Hip Breadth, Sitting

The distance between the lateral points of the hips or thighs (whichever are broader) is measured with a beam caliper. The subject sits erect with the feet and knees together.





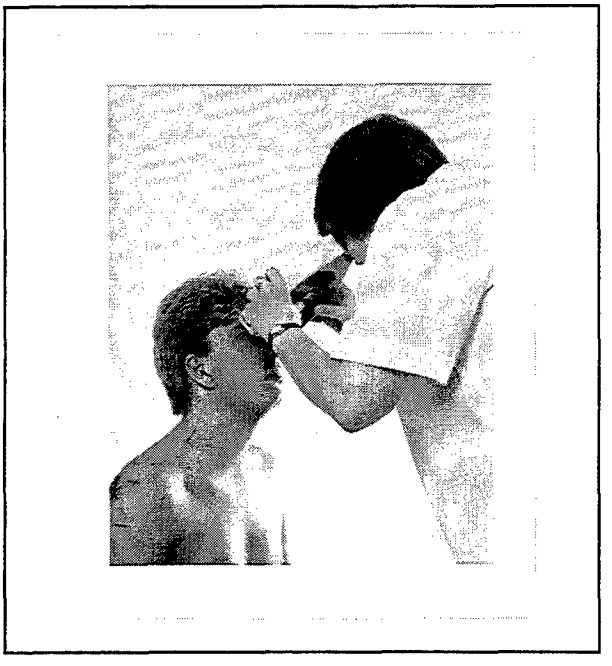
Hip Breadth, Sitting

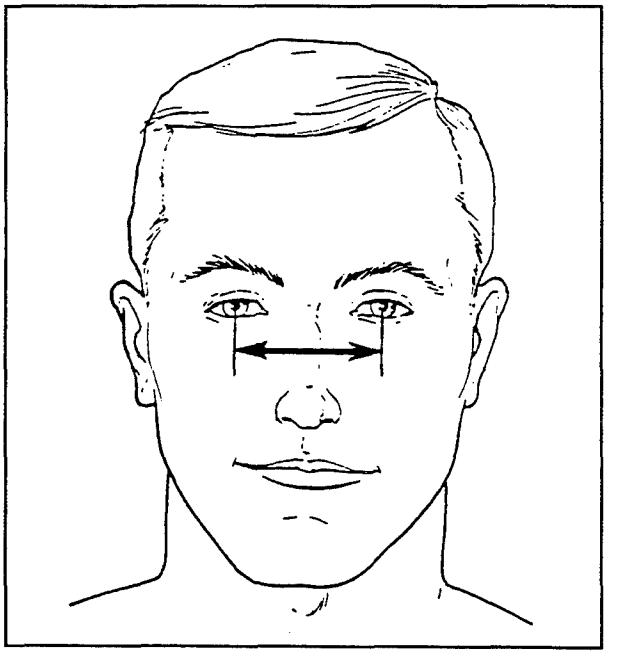
Males		
Millimeters		Inches
368.00	Mean	14.49
1.30	SE(Mean)	0.05
24.70	SD(Mean)	0.97
0.91	SE(SD)	0.04
299.00	Minimum	11.77
490.00	Maximum	19.29
Symmetry-Veta I		3.80
Kurtosis-Veta II		2.40
Coeff. of Variation		6.7%
Sample Size		4445
Percentiles		
Millimeters		Inches
317.60	1st	12.50
322.80	2nd	12.71
326.20	3rd	12.84
330.80	5th	13.02
338.30	10th	13.32
343.50	15th	13.52
347.70	20th	13.69
351.50	25th	13.84
354.90	30th	13.97
358.10	35th	14.10
361.20	40th	14.22
364.20	45th	14.34
367.30	50th	14.46
370.40	55th	14.58
373.60	60th	14.71
376.90	65th	14.84
380.50	70th	14.98
384.50	75th	15.14
389.10	80th	15.32
394.50	85th	15.53
401.60	90th	15.81
412.50	95th	16.24
419.90	97th	16.53
425.50	98th	16.75
434.50	99th	17.11

Females		
Millimeters		Inches
385.00	Mean	15.16
1.40	SE(Mean)	0.06
26.60	SD(Mean)	1.05
1.02	SE(SD)	0.04
308.00	Minimum	12.13
493.00	Maximum	19.41
Symmetry-Veta I		3.80
Kurtosis-Veta II		2.90
Coeff. of Variation		6.9%
Sample Size		2888
Percentiles		
Millimeters		Inches
329.50	1st	12.97
335.80	2nd	13.22
339.70	3rd	13.37
345.00	5th	13.58
353.30	10th	13.91
359.00	15th	14.13
363.50	20th	14.31
367.50	25th	14.47
371.10	30th	14.61
374.50	35th	14.74
377.70	40th	14.87
380.90	45th	15.00
384.10	50th	15.12
387.40	55th	15.25
390.80	60th	15.39
394.40	65th	15.53
398.20	70th	15.68
402.50	75th	15.85
407.40	80th	16.04
413.30	85th	16.27
421.10	90th	16.58
433.40	95th	17.06
442.00	97th	17.40
448.50	98th	17.66
459.40	99th	18.09

(42) Interpupillary Breadth

The distance between the two pupils is measured with a pupillometer.





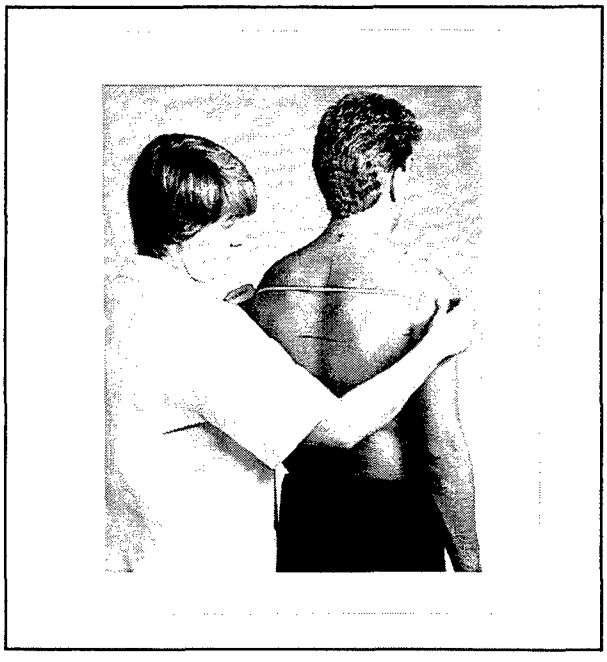
Interpupillary Breadth

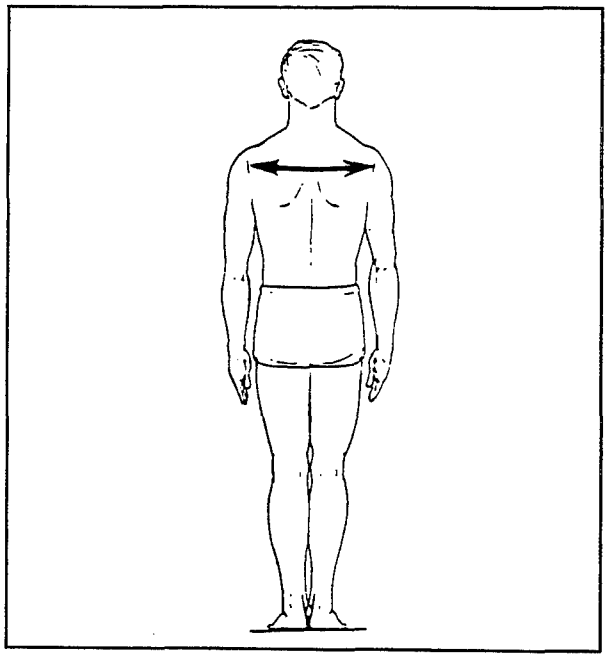
Males		
Millimeters		Inches
64.00	Mean	2.52
0.20	SE(Mean)	0.01
3.60	SD(Mean)	0.14
0.13	SE(SD)	0.01
52.00	Minimum	2.05
78.00	Maximum	3.07
Symmetry-Veta I		2.30
Kurtosis-Veta II		-0.30
Coeff. of Variation		5.6%
Sample Size		4437
Percentiles		
Millimeters		Inches
56.20	1st	2.21
57.20	2nd	2.25
57.80	3rd	2.28
58.60	5th	2.31
59.80	10th	2.35
60.60	15th	2.39
61.20	20th	2.41
61.80	25th	2.43
62.30	30th	2.45
62.70	35th	2.47
63.20	40th	2.49
63.60	45th	2.50
64.10	50th	2.52
64.50	55th	2.54
65.00	60th	2.56
65.40	65th	2.57
66.00	70th	2.60
66.50	75th	2.62
67.20	80th	2.65
67.90	85th	2.67
68.90	90th	2.71
70.30	95th	2.77
71.20	97th	2.80
71.90	98th	2.83
72.90	99th	2.87

Females		
Millimeters		Inches
61.00	Mean	2.40
0.20	SE(Mean)	0.01
3.50	SD(Mean)	0.14
0.13	SE(SD)	0.01
52.00	Minimum	2.05
76.00	Maximum	2.99
Symmetry-Veta I		3.00
Kurtosis-Veta II		0.60
Coeff. of Variation		5.7%
Sample Size		2885
Percentiles		
Millimeters		Inches
54.40	1st	2.14
55.20	2nd	2.17
55.70	3rd	2.19
56.40	5th	2.22
57.50	10th	2.26
58.30	15th	2.30
58.90	20th	2.32
59.40	25th	2.34
59.90	30th	2.36
60.30	35th	2.37
60.80	40th	2.39
61.20	45th	2.41
61.60	50th	2.43
62.00	55th	2.44
62.50	60th	2.46
62.90	65th	2.48
63.40	70th	2.50
64.00	75th	2.52
64.60	80th	2.54
65.30	85th	2.57
66.30	90th	2.61
67.90	95th	2.67
68.90	97th	2.71
69.80	98th	2.75
71.10	99th	2.80

(43) Interscye II

The distance across the back between the right and left midscye landmarks is measured with a tape. The tape is held on the skin surface except where it spans the hollow of the back. The subject stands erect looking straight ahead. The heels are together with the weight distributed equally on both feet. The shoulders and upper extremities are relaxed. The measurement is taken at the maximum point of quiet respiration.





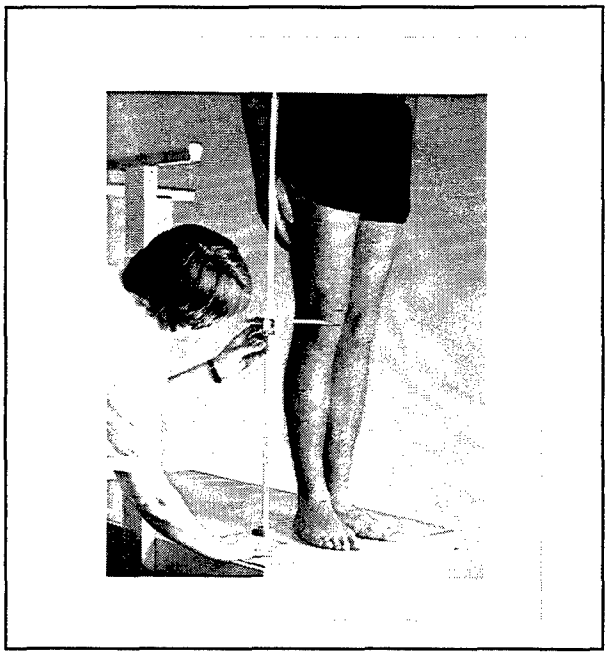
Interscye II

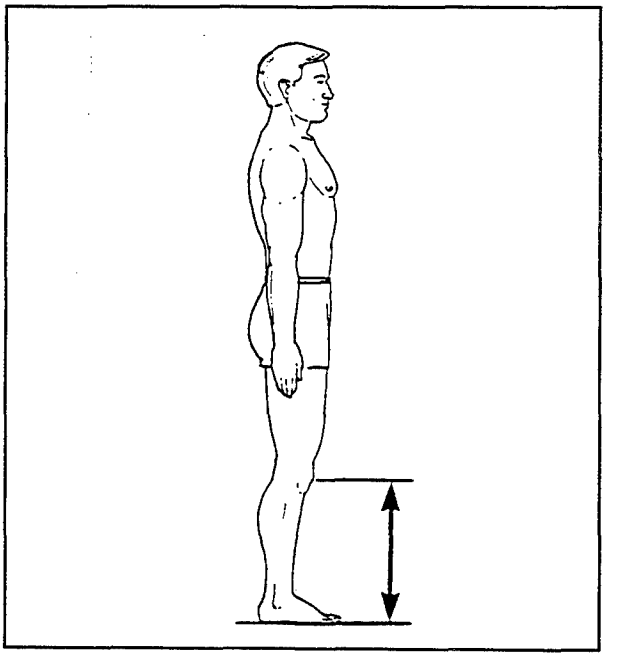
Males		
Millimeters		Inches
408.00	Mean	16.06
1.40	SE(Mean)	0.06
26.80	SD(Mean)	1.06
0.99	SE(SD)	0.04
300.00	Minimum	11.81
505.00	Maximum	19.88
Symmetry-Veta I		0.90
Kurtosis-Veta II		-0.10
Coeff. of Variation		6.6%
Sample Size		4447
Percentiles		
Millimeters		Inches
348.40	1st	13.72
354.80	2nd	13.97
359.00	3rd	14.13
364.90	5th	14.37
374.10	10th	14.73
380.50	15th	14.98
385.60	20th	15.18
390.00	25th	15.35
394.00	30th	15.51
397.60	35th	15.65
401.20	40th	15.80
404.60	45th	15.93
407.90	50th	16.06
411.30	55th	16.19
414.80	60th	16.33
418.30	65th	16.47
422.10	70th	16.62
426.20	75th	16.78
430.80	80th	16.96
436.10	85th	17.17
442.90	90th	17.44
453.20	95th	17.84
460.00	97th	18.11
465.10	98th	18.31
473.20	99th	18.63

Females		
Millimeters		Inches
376.00	Mean	14.80
1.30	SE(Mean)	0.05
24.40	SD(Mean)	0.96
0.93	SE(SD)	0.04
284.00	Minimum	11.18
470.00	Maximum	18.50
Symmetry-Veta I		0.90
Kurtosis-Veta II		0.70
Coeff. of Variation		6.5%
Sample Size		2888
Percentiles		
Millimeters		Inches
320.50	1st	12.62
326.90	2nd	12.87
331.10	3rd	13.04
336.80	5th	13.26
345.60	10th	13.61
351.60	15th	13.84
356.30	20th	14.03
360.40	25th	14.19
364.10	30th	14.33
367.40	35th	14.46
370.60	40th	14.59
373.70	45th	14.71
376.70	50th	14.83
379.80	55th	14.95
382.80	60th	15.07
386.00	65th	15.20
389.40	70th	15.33
393.00	75th	15.47
397.10	80th	15.63
402.00	85th	15.83
408.10	90th	16.07
417.60	95th	16.44
424.00	97th	16.69
428.80	98th	16.88
436.80	99th	17.20

(44) Knee Height, Midpatella

The vertical distance between a standing surface and the midpatella landmark at the center of the right knee is measured with an anthropometer. The subject stands erect with the heels together and the weight distributed equally on both feet.





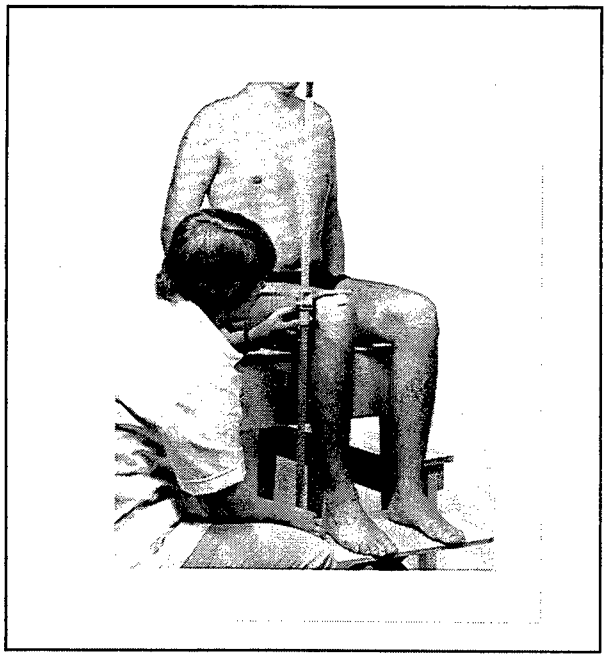
Knee Height, Midpatella

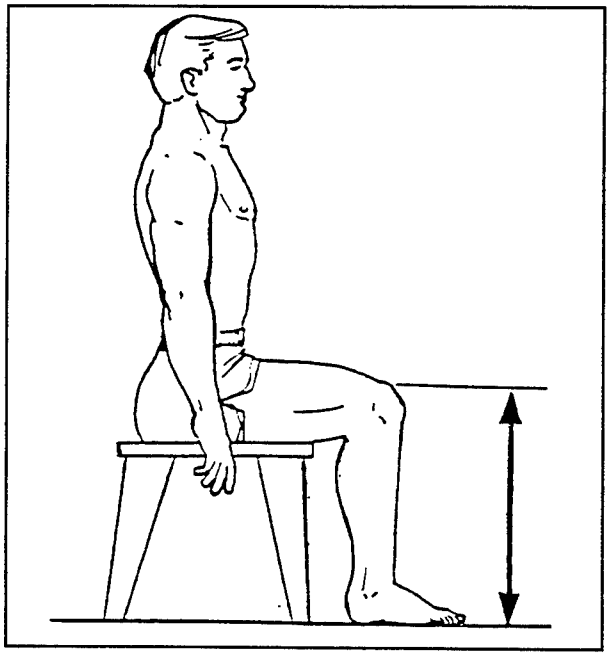
Males		
Millimeters		Inches
504.00	Mean	19.84
1.40	SE(Mean)	0.06
27.20	SD(Mean)	1.07
1.01	SE(SD)	0.04
400.00	Minimum	15.75
614.00	Maximum	24.17
Symmetry-Veta I		0.50
Kurtosis-Veta II		0.10
Coeff. of Variation		5.4%
Sample Size		4431
Percentiles		
Millimeters		Inches
441.30	1st	17.37
449.10	2nd	17.68
454.00	3rd	17.87
460.40	5th	18.13
470.20	10th	18.51
476.80	15th	18.77
481.90	20th	18.97
486.40	25th	19.15
490.40	30th	19.31
494.10	35th	19.45
497.70	40th	19.59
501.10	45th	19.73
504.50	50th	19.86
508.00	55th	20.00
511.50	60th	20.14
515.10	65th	20.28
519.00	70th	20.43
523.20	75th	20.60
527.90	80th	20.78
533.40	85th	21.00
540.40	90th	21.28
550.90	95th	21.69
557.60	97th	21.95
562.60	98th	22.15
570.30	99th	22.45

Females		
Millimeters		Inches
457.00	Mean	17.99
1.40	SE(Mean)	0.06
25.30	SD(Mean)	1.00
0.97	SE(SD)	0.04
380.00	Minimum	14.96
584.00	Maximum	22.99
Symmetry-Veta I		1.90
Kurtosis-Veta II		1.40
Coeff. of Variation		5.5%
Sample Size		2881
Percentiles		
Millimeters		Inches
401.80	1st	15.82
407.80	2nd	16.06
411.60	3rd	16.20
417.00	5th	16.42
425.40	10th	16.75
431.20	15th	16.98
435.90	20th	17.16
440.00	25th	17.32
443.60	30th	17.46
447.00	35th	17.60
450.30	40th	17.73
453.40	45th	17.85
456.60	50th	17.98
459.80	55th	18.10
463.00	60th	18.23
466.30	65th	18.36
469.90	70th	18.50
473.80	75th	18.65
478.30	80th	18.83
483.50	85th	19.04
490.20	90th	19.30
500.50	95th	19.70
507.40	97th	19.98
512.70	98th	20.19
521.20	99th	20.52

(45) Knee Height, Sitting

The vertical distance between a footrest surface and the suprapatella landmark at the top of the right knee (located and drawn while the subject stands) is measured with an anthropometer. The subject sits with the thighs parallel, the knees flexed 90 degrees, and the feet in line with the thighs.





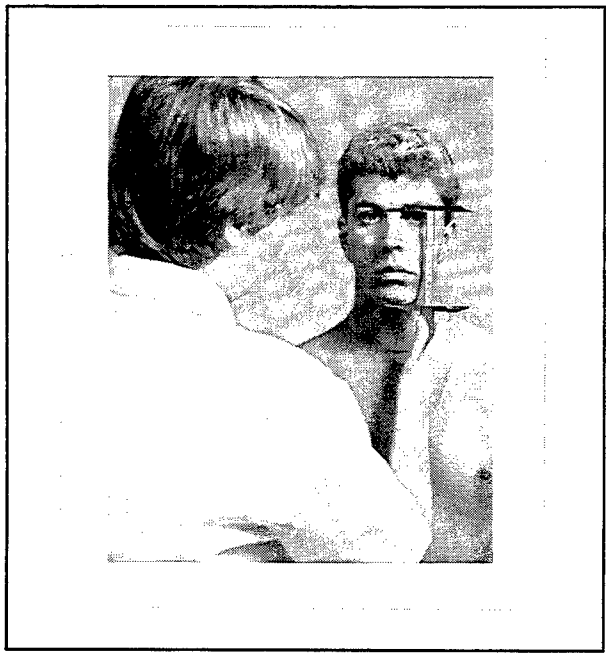
Knee Height, Sitting

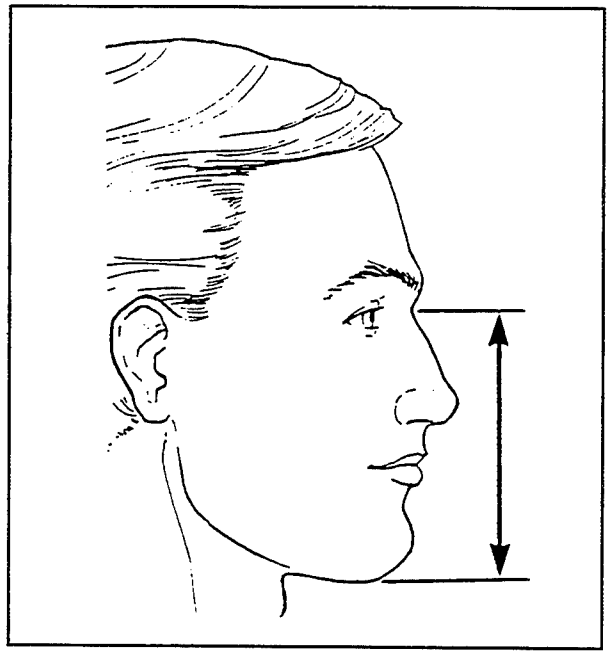
Males		
Millimeters		Inches
559.00	Mean	22.01
1.40	SE(Mean)	0.06
27.20	SD(Mean)	1.07
1.01	SE(SD)	0.04
449.00	Minimum	17.68
657.00	Maximum	25.87
Symmetry-Veta I		0.50
Kurtosis-Veta II		0.80
Coeff. of Variation		4.9%
Sample Size		4445
Percentiles		
Millimeters		Inches
495.10	1st	19.49
503.30	2nd	19.81
508.30	3rd	20.01
514.90	5th	20.27
524.80	10th	20.66
531.30	15th	20.92
536.50	20th	21.12
540.90	25th	21.30
544.90	30th	21.45
548.60	35th	21.60
552.10	40th	21.74
555.50	45th	21.87
558.90	50th	22.00
562.40	55th	22.14
565.80	60th	22.28
569.50	65th	22.42
573.30	70th	22.57
577.60	75th	22.74
582.30	80th	22.93
587.80	85th	23.14
594.90	90th	23.42
605.30	95th	23.83
612.10	97th	24.10
617.00	98th	24.29
624.60	99th	24.59

Females		
Millimeters		Inches
514.00	Mean	20.24
1.40	SE(Mean)	0.06
25.60	SD(Mean)	1.01
0.98	SE(SD)	0.04
438.00	Minimum	17.24
633.00	Maximum	24.92
Symmetry-Veta I		1.70
Kurtosis-Veta II		1.10
Coeff. of Variation		5.0%
Sample Size		2887
Percentiles		
Millimeters		Inches
455.10	1st	17.92
462.90	2nd	18.22
467.60	3rd	18.41
473.50	5th	18.64
482.30	10th	18.99
488.10	15th	19.22
492.60	20th	19.39
496.60	25th	19.55
500.10	30th	19.69
503.50	35th	19.82
506.70	40th	19.95
509.90	45th	20.07
513.10	50th	20.20
516.30	55th	20.33
519.60	60th	20.46
523.10	65th	20.59
526.80	70th	20.74
530.90	75th	20.90
535.60	80th	21.09
541.00	85th	21.30
548.00	90th	21.57
558.20	95th	21.98
564.70	97th	22.23
569.30	98th	22.41
576.20	99th	22.69

(46) Menton-Sellion Length

The vertical distance between the menton landmark at the bottom of the chin and the sellion landmark at the deepest point of the nasal root depression is measured with a sliding caliper. The teeth are lightly occluded.





Menton-Sellion Length

Males		
Millimeters		Inches
121.00	Mean	4.76
0.30	SE(Mean)	0.01
6.50	SD(Mean)	0.26
0.24	SE(SD)	0.01
100.00	Minimum	3.94
149.00	Maximum	5.87
Symmetry-Veta I		2.00
Kurtosis-Veta II		1.70
Coeff. of Variation		5.4%
Sample Size		4444

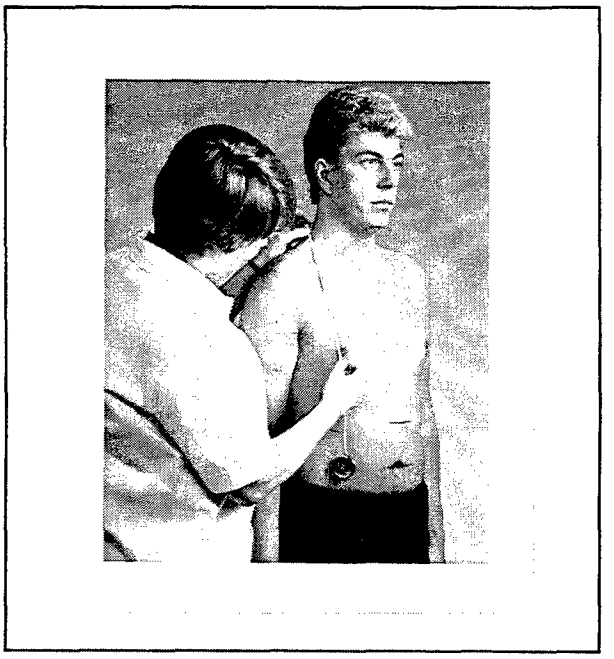
Percentiles		
Millimeters		Inches
107.20	1st	4.22
108.90	2nd	4.29
110.00	3rd	4.33
111.50	5th	4.39
113.70	10th	4.48
115.20	15th	4.54
116.30	20th	4.58
117.40	25th	4.62
118.30	30th	4.66
119.10	35th	4.69
119.90	40th	4.72
120.70	45th	4.75
121.50	50th	4.78
122.30	55th	4.81
123.10	60th	4.85
124.00	65th	4.88
124.90	70th	4.92
126.00	75th	4.96
127.10	80th	5.00
128.50	85th	5.06
130.40	90th	5.13
133.20	95th	5.24
135.20	97th	5.32
136.60	98th	5.38
139.00	99th	5.47

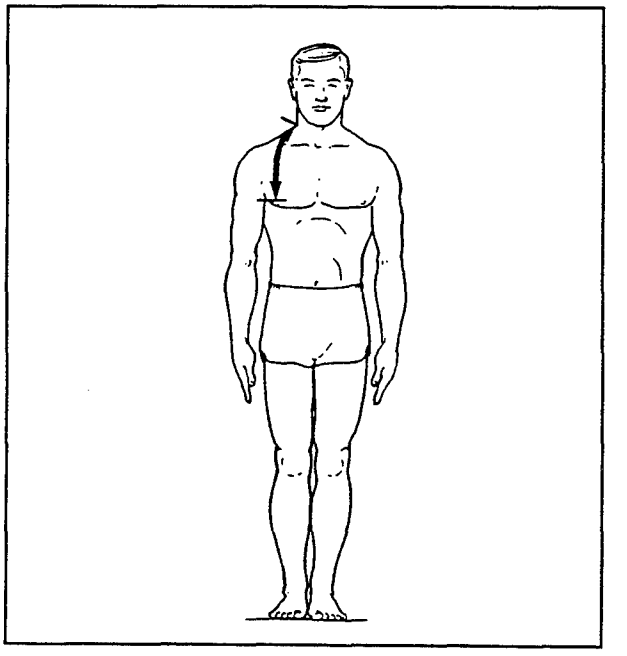
Females		
Millimeters		Inches
113.00	Mean	4.45
0.30	SE(Mean)	0.01
5.90	SD(Mean)	0.23
0.23	SE(SD)	0.01
95.00	Minimum	3.74
134.00	Maximum	5.28
Symmetry-Veta I		1.30
Kurtosis-Veta II		0.30
Coeff. of Variation		5.2%
Sample Size		2888

Percentiles		
Millimeters		Inches
100.20	1st	3.94
101.60	2nd	4.00
102.60	3rd	4.04
103.90	5th	4.09
105.90	10th	4.17
107.30	15th	4.22
108.40	20th	4.27
109.30	25th	4.30
110.20	30th	4.34
111.00	35th	4.37
111.70	40th	4.40
112.40	45th	4.43
113.10	50th	4.45
113.90	55th	4.48
114.60	60th	4.51
115.30	65th	4.54
116.10	70th	4.57
117.00	75th	4.61
118.00	80th	4.65
119.20	85th	4.69
120.70	90th	4.75
123.20	95th	4.85
124.90	97th	4.92
126.30	98th	4.97
128.60	99th	5.06

(47) Neck-Bustpoint/Thelion Length

The distance between the trapezius landmark at the right side of the neck and the right bustpoint landmark on women or the right nipple (thelion) on men is measured with a tape. The subject stands erect looking straight ahead. The shoulders and upper extremities are relaxed. The measurement is taken at the maximum point of quiet respiration.





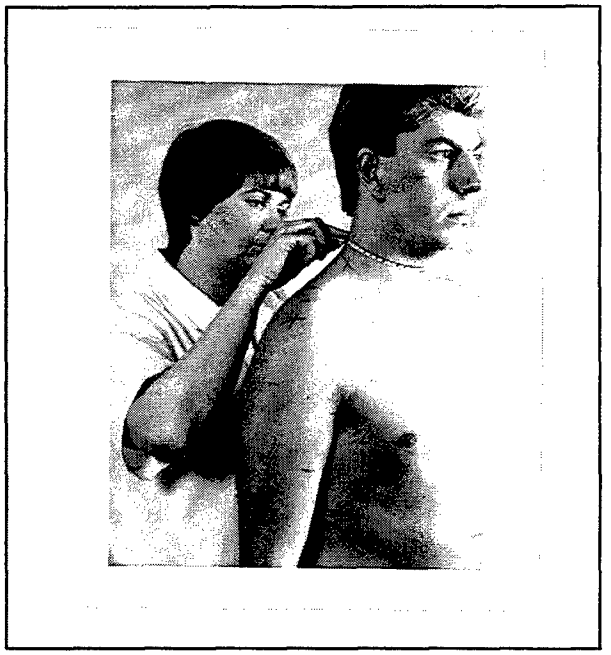
Neck-Bustpoint/Thelion Length

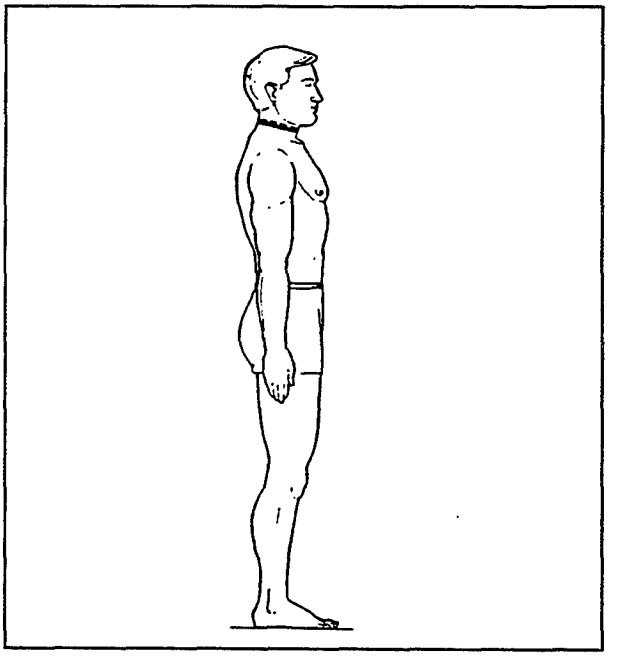
Males		
Millimeters		Inches
273.00	Mean	10.75
0.90	SE(Mean)	0.04
18.10	SD(Mean)	0.71
0.67	SE(SD)	0.03
209.00	Minimum	8.23
352.00	Maximum	13.86
Symmetry-Veta I		2.50
Kurtosis-Veta II		2.60
Coeff. of Variation		6.6%
Sample Size		4447
Percentiles		
Millimeters		Inches
233.30	1st	9.19
237.30	2nd	9.34
240.00	3rd	9.45
243.80	5th	9.60
250.00	10th	9.84
254.30	15th	10.01
257.80	20th	10.15
260.70	25th	10.26
263.40	30th	10.37
265.90	35th	10.47
268.20	40th	10.56
270.40	45th	10.65
272.60	50th	10.73
274.90	55th	10.82
277.10	60th	10.91
279.50	65th	11.00
281.90	70th	11.10
284.70	75th	11.21
287.70	80th	11.33
291.40	85th	11.47
296.20	90th	11.66
303.80	95th	11.96
309.20	97th	12.17
313.50	98th	12.34
320.90	99th	12.63

Females		
Millimeters		Inches
268.00	Mean	10.55
1.10	SE(Mean)	0.04
21.30	SD(Mean)	0.84
0.81	SE(SD)	0.03
205.00	Minimum	8.07
347.00	Maximum	13.66
Symmetry-Veta I		2.90
Kurtosis-Veta II		2.10
Coeff. of Variation		8.0%
Sample Size		2888
Percentiles		
Millimeters		Inches
223.10	1st	8.78
227.90	2nd	8.97
231.00	3rd	9.09
235.40	5th	9.27
242.30	10th	9.54
247.10	15th	9.73
250.90	20th	9.88
254.20	25th	10.01
257.20	30th	10.13
259.90	35th	10.23
262.50	40th	10.33
265.10	45th	10.44
267.60	50th	10.54
270.20	55th	10.64
272.80	60th	10.74
275.50	65th	10.85
278.50	70th	10.96
281.70	75th	11.09
285.50	80th	11.24
289.90	85th	11.41
295.90	90th	11.65
305.50	95th	12.03
312.40	97th	12.30
317.80	98th	12.51
327.20	99th	12.88

(48) Neck Circumference

The circumference of the neck at the level of the infrathyroid landmark (Adam's apple) is measured with a tape. The plane of the measurement is perpendicular to the long axis of the neck. The subject stands erect with the head in the Frankfort plane. The shoulders and upper extremities are relaxed.





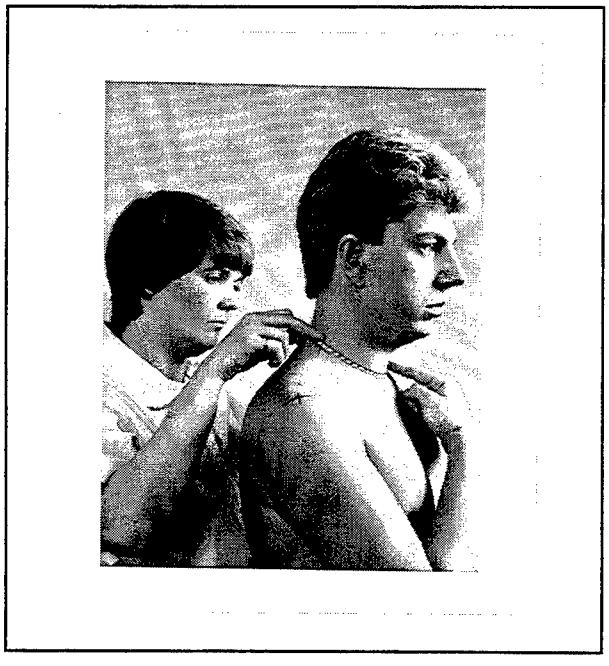
Neck Circumference

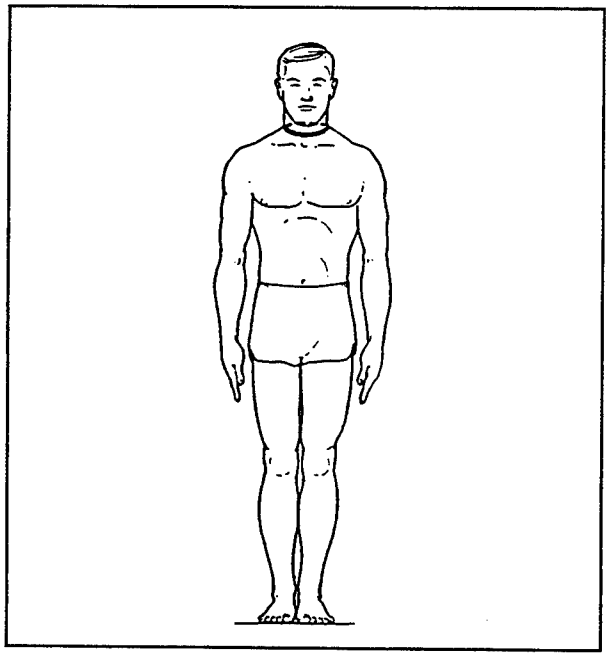
Males		
Millimeters		Inches
380.00	Mean	14.96
1.00	SE(Mean)	0.04
18.70	SD(Mean)	0.74
0.69	SE(SD)	0.03
316.00	Minimum	12.44
470.00	Maximum	18.50
Symmetry-Veta I		2.30
Kurtosis-Veta II		3.80
Coeff. of Variation		4.9%
Sample Size		4447
Percentiles		
Millimeters		Inches
338.40	1st	13.32
343.10	2nd	13.51
346.10	3rd	13.63
350.20	5th	13.79
356.70	10th	14.04
361.00	15th	14.21
364.50	20th	14.35
367.50	25th	14.47
370.20	30th	14.57
372.70	35th	14.67
375.10	40th	14.77
377.40	45th	14.86
379.70	50th	14.95
382.00	55th	15.04
384.40	60th	15.13
386.80	65th	15.23
389.40	70th	15.33
392.30	75th	15.44
395.50	80th	15.57
399.40	85th	15.72
404.40	90th	15.92
412.20	95th	16.23
417.60	97th	16.44
421.70	98th	16.60
428.50	99th	16.87

Females		
Millimeters		Inches
315.00	Mean	12.40
0.80	SE(Mean)	0.03
15.00	SD(Mean)	0.59
0.57	SE(SD)	0.02
273.00	Minimum	10.75
384.00	Maximum	15.12
Symmetry-Veta I		4.40
Kurtosis-Veta II		2.70
Coeff. of Variation		4.8%
Sample Size		2888
Percentiles		
Millimeters		Inches
286.00	1st	11.26
288.50	2nd	11.36
290.20	3rd	11.43
292.90	5th	11.53
297.30	10th	11.70
300.40	15th	11.83
303.00	20th	11.93
305.30	25th	12.02
307.40	30th	12.10
309.30	35th	12.18
311.20	40th	12.25
313.00	45th	12.32
314.90	50th	12.40
316.70	55th	12.47
318.60	60th	12.54
320.60	65th	12.62
322.80	70th	12.71
325.20	75th	12.80
327.90	80th	12.91
331.10	85th	13.04
335.40	90th	13.20
342.30	95th	13.48
347.20	97th	13.67
351.00	98th	13.82
357.50	99th	14.07

(49) Neck Circumference, Base

The circumference of the base of the neck is measured by a tape passing over the drawn lateral and anterior neck landmarks. The subject stands erect with the head in the Frankfort plane. The shoulders and upper extremities are relaxed.





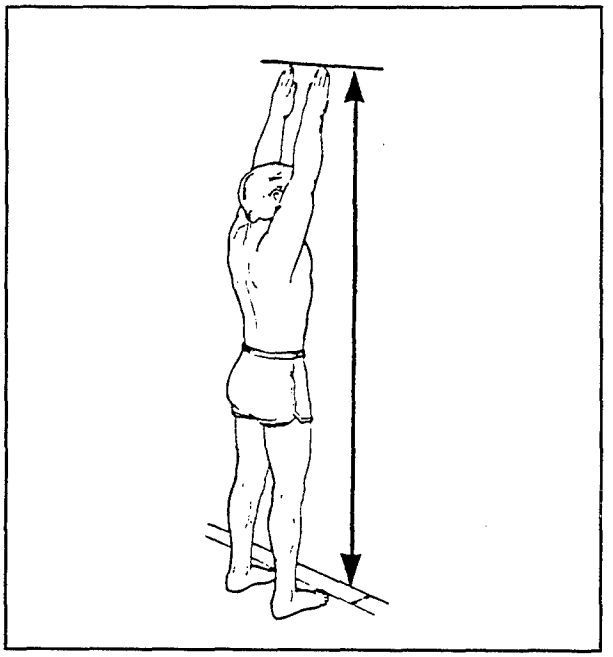
Neck Circumference, Base

Males		
Millimeters		Inches
409.00	Mean	16.10
1.00	SE(Mean)	0.04
19.30	SD(Mean)	0.76
0.71	SE(SD)	0.03
343.00	Minimum	13.50
505.00	Maximum	19.88
Symmetry-Veta I		2.40
Kurtosis-Veta II		4.50
Coeff. of Variation		4.7%
Sample Size		4447
Percentiles		
Millimeters		Inches
365.40	1st	14.39
370.40	2nd	14.58
373.60	3rd	14.71
378.10	5th	14.89
384.90	10th	15.15
389.60	15th	15.34
393.20	20th	15.48
396.40	25th	15.61
399.20	30th	15.72
401.70	35th	15.81
404.20	40th	15.91
406.60	45th	16.01
408.90	50th	16.10
411.20	55th	16.19
413.60	60th	16.28
416.10	65th	16.38
418.70	70th	16.48
421.60	75th	16.60
424.90	80th	16.73
428.80	85th	16.88
434.00	90th	17.09
442.10	95th	17.41
447.90	97th	17.63
452.40	98th	17.81
460.10	99th	18.11

Females		
Millimeters		Inches
346.00	Mean	13.62
0.90	SE(Mean)	0.04
16.40	SD(Mean)	0.65
0.63	SE(SD)	0.02
298.00	Minimum	11.73
414.00	Maximum	16.30
Symmetry-Veta I		2.90
Kurtosis-Veta II		0.40
Coeff. of Variation		4.7%
Sample Size		2888
Percentiles		
Millimeters		Inches
312.70	1st	12.31
315.50	2nd	12.42
317.50	3rd	12.50
320.50	5th	12.62
325.50	10th	12.81
329.20	15th	12.96
332.10	20th	13.07
334.80	25th	13.18
337.20	30th	13.28
339.40	35th	13.36
341.60	40th	13.45
343.70	45th	13.53
345.70	50th	13.61
347.90	55th	13.70
350.00	60th	13.78
352.20	65th	13.87
354.60	70th	13.96
357.20	75th	14.06
360.20	80th	14.18
363.60	85th	14.31
368.10	90th	14.49
374.90	95th	14.76
379.50	97th	14.94
383.10	98th	15.08
388.90	99th	15.31

(50) Overhead Fingertip Reach

The vertical distance between a standing surface and the tip of the right middle finger when the arm is extended overhead is measured on a wall scale. The subject stands facing a wall-mounted scale with both arms extended overhead parallel to each other. The toes are 20 cm from the wall and the feet are about 10 cm apart. The palms of the hands rest on the scale. A block is placed against the tip of the finger to establish the measurement. The measurement is taken at the maximum point of quiet respiration.



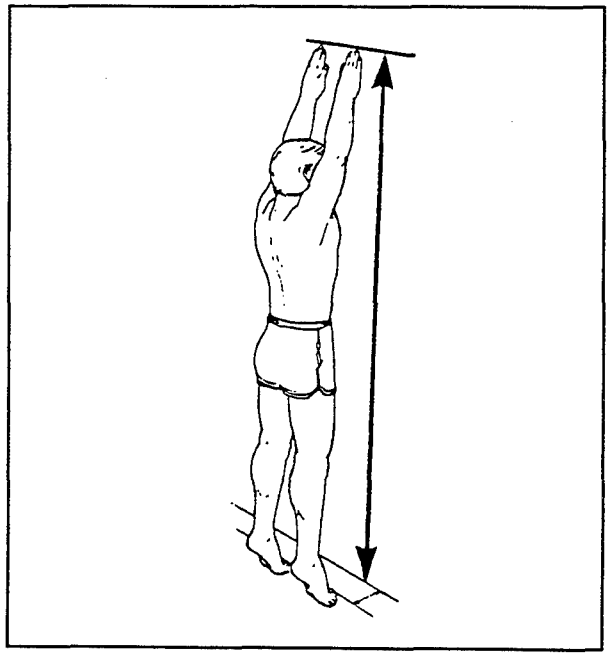
Overhead Fingertip Reach

Males		
Millimeters		Inches
2233.00	Mean	87.91
5.00	SE(Mean)	0.20
96.20	SD(Mean)	3.79
3.57	SE(SD)	0.14
1868.00	Minimum	73.54
2545.00	Maximum	100.20
Symmetry-Veta I		-0.10
Kurtosis-Veta II		-0.90
Coeff. of Variation		4.3%
Sample Size		4430
Percentiles		
Millimeters		Inches
2011.30	1st	79.19
2036.40	2nd	80.17
2052.60	3rd	80.81
2074.70	5th	81.68
2109.10	10th	83.04
2132.60	15th	83.96
2151.30	20th	84.70
2167.50	25th	85.33
2182.10	30th	85.91
2195.60	35th	86.44
2208.40	40th	86.94
2220.90	45th	87.44
2233.20	50th	87.92
2245.50	55th	88.41
2258.00	60th	88.90
2270.90	65th	89.41
2284.50	70th	89.94
2299.20	75th	90.52
2315.70	80th	91.17
2334.70	85th	91.92
2358.60	90th	92.86
2393.80	95th	94.24
2416.40	97th	95.13
2432.90	98th	95.78
2458.50	99th	96.79

Females		
Millimeters		Inches
2059.00	Mean	81.06
4.90	SE(Mean)	0.19
90.30	SD(Mean)	3.56
3.46	SE(SD)	0.14
1778.00	Minimum	70.00
2393.00	Maximum	94.21
Symmetry-Veta I		0.60
Kurtosis-Veta II		-0.90
Coeff. of Variation		4.4%
Sample Size		2880
Percentiles		
Millimeters		Inches
1849.10	1st	72.80
1874.80	2nd	73.81
1890.80	3rd	74.44
1912.20	5th	75.28
1944.70	10th	76.56
1966.50	15th	77.42
1983.70	20th	78.10
1998.50	25th	78.68
2011.80	30th	79.20
2024.10	35th	79.69
2035.80	40th	80.15
2047.10	45th	80.59
2058.40	50th	81.04
2069.80	55th	81.49
2081.30	60th	81.94
2093.20	65th	82.41
2105.90	70th	82.91
2119.80	75th	83.46
2135.40	80th	84.07
2153.60	85th	84.79
2177.00	90th	85.71
2212.10	95th	87.09
2235.20	97th	88.00
2252.40	98th	88.68
2279.60	99th	89.75

(51) Overhead Fingertip Reach, Extended

The vertical distance between a standing surface and the tip of the right middle finger when the arm is extended overhead as high as possible is measured on a wall scale. The subject stands on his/her toes facing a wall-mounted scale with both arms parallel and extended overhead as high as possible. The toes are 20 cm from the wall and the feet are about 10 cm apart. The palms of the hands rest on the scale. A block is placed against the tip of the finger to establish the measurement. The measurement is taken at the maximum point of quiet respiration.



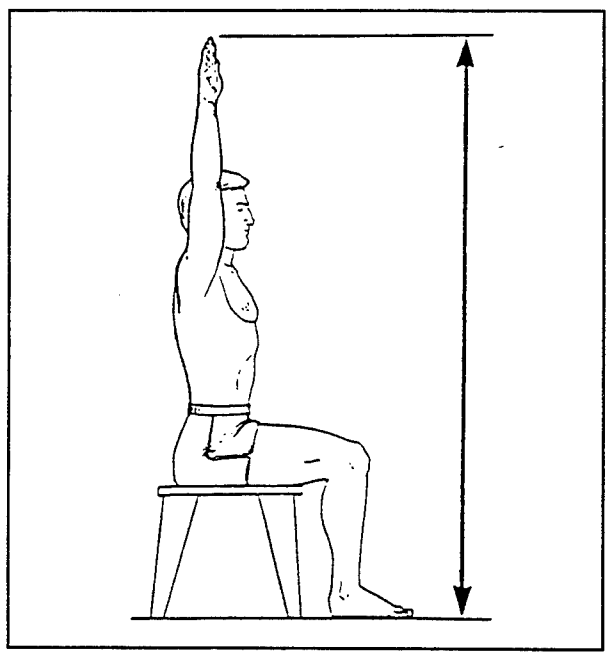
Overhead Fingertip Reach, Extended

Males		
Millimeters		Inches
2330.00	Mean	91.73
5.20	SE(Mean)	0.20
98.70	SD(Mean)	3.89
3.66	SE(SD)	0.14
1978.00	Minimum	77.87
2649.00	Maximum	104.29
Symmetry-Veta I		0.20
Kurtosis-Veta II		-0.80
Coeff. of Variation		4.2%
Sample Size		4429
Percentiles		
Millimeters		Inches
2105.60	1st	82.90
2130.90	2nd	83.89
2147.10	3rd	84.53
2169.40	5th	85.41
2204.30	10th	86.78
2228.10	15th	87.72
2247.00	20th	88.46
2263.50	25th	89.11
2278.30	30th	89.70
2292.00	35th	90.24
2305.10	40th	90.75
2317.70	45th	91.25
2330.30	50th	91.74
2342.90	55th	92.24
2355.60	60th	92.74
2368.80	65th	93.26
2382.70	70th	93.81
2397.80	75th	94.40
2414.80	80th	95.07
2434.40	85th	95.84
2459.20	90th	96.82
2496.10	95th	98.27
2520.10	97th	99.22
2537.70	98th	99.91
2565.40	99th	101.00

Females		
Millimeters		Inches
2152.00	Mean	84.72
5.00	SE(Mean)	0.20
92.60	SD(Mean)	3.65
3.55	SE(SD)	0.14
1865.00	Minimum	73.43
2488.00	Maximum	97.95
Symmetry-Veta I		0.40
Kurtosis-Veta II		-0.50
Coeff. of Variation		4.3%
Sample Size		2879
Percentiles		
Millimeters		Inches
1937.60	1st	76.28
1963.60	2nd	77.31
1979.80	3rd	77.94
2001.50	5th	78.80
2034.60	10th	80.10
2056.80	15th	80.98
2074.30	20th	81.67
2089.50	25th	82.26
2103.10	30th	82.80
2115.70	35th	83.30
2127.70	40th	83.77
2139.40	45th	84.23
2151.00	50th	84.69
2162.70	55th	85.15
2174.60	60th	85.61
2186.90	65th	86.10
2199.90	70th	86.61
2214.20	75th	87.17
2230.10	80th	87.80
2248.70	85th	88.53
2272.40	90th	89.46
2307.50	95th	90.85
2330.30	97th	91.74
2346.90	98th	92.40
2372.90	99th	93.42

(52) Overhead Fingertip Reach, Sitting

The vertical distance between a sitting surface and the tip of the right middle finger of a seated subject whose arm is extended overhead is measured on a wall scale. The subject sits erect on a flat surface 40.8 cm high with the right arm and hand extended vertically overhead as far as possible and the palm of the hand facing forward. Neither the back nor the arm touches a wall. A block placed at the tip of the middle finger spans the distance between the finger and the wall and establishes the measurement on the wall scale. The measurement is made at the maximum point of quiet respiration.



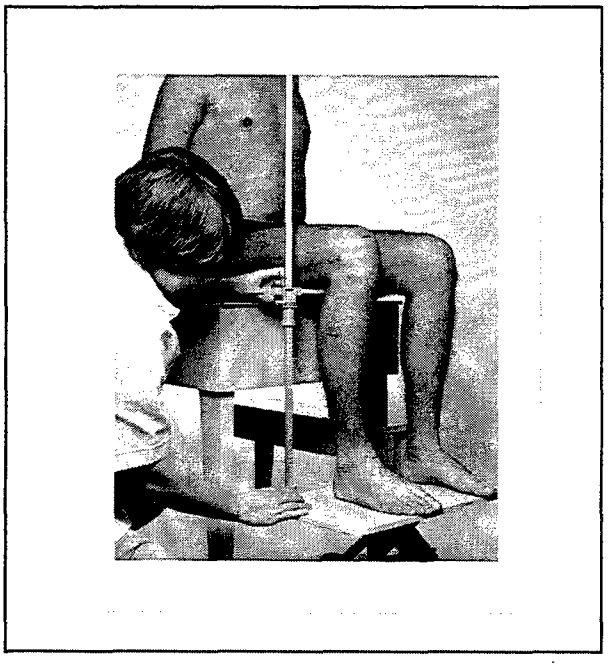
Overhead Fingertip Reach, Sitting

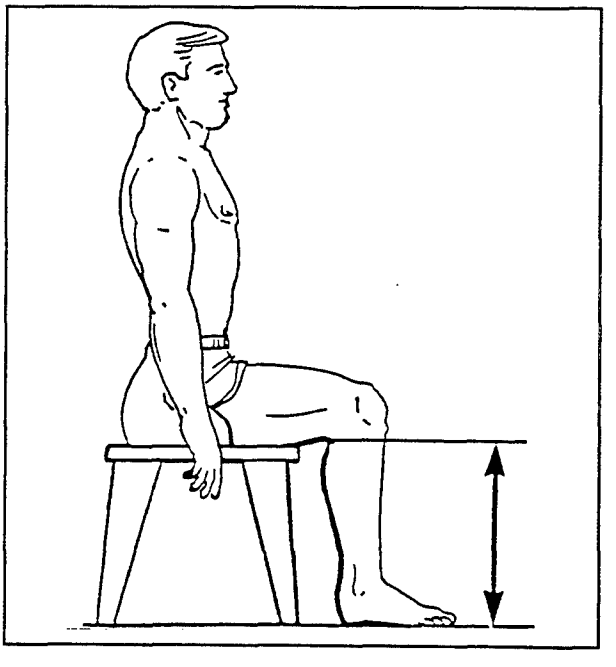
Males		
Millimeters		Inches
1435.00	Mean	56.50
3.00	SE(Mean)	0.12
58.10	SD(Mean)	2.29
2.15	SE(SD)	0.08
1227.00	Minimum	48.31
1633.00	Maximum	64.29
Symmetry-Veta I		0.00
Kurtosis-Veta II		-0.70
Coeff. of Variation		4.0%
Sample Size		4430
Percentiles		
Millimeters		Inches
1302.00	1st	51.26
1316.70	2nd	51.84
1326.30	3rd	52.22
1339.40	5th	52.73
1360.10	10th	53.55
1374.30	15th	54.11
1385.60	20th	54.55
1395.40	25th	54.94
1404.20	30th	55.28
1412.30	35th	55.60
1420.00	40th	55.91
1427.50	45th	56.20
1434.90	50th	56.49
1442.30	55th	56.78
1449.80	60th	57.08
1457.60	65th	57.39
1465.80	70th	57.71
1474.60	75th	58.06
1484.50	80th	58.44
1495.90	85th	58.89
1510.40	90th	59.46
1531.90	95th	60.31
1545.80	97th	60.86
1556.10	98th	61.26
1572.30	99th	61.90

Females		
Millimeters		Inches
1326.00	Mean	52.20
3.00	SE(Mean)	0.12
54.60	SD(Mean)	2.15
2.09	SE(SD)	0.08
1122.00	Minimum	44.17
1514.00	Maximum	59.61
Symmetry-Veta I		-0.80
Kurtosis-Veta II		-0.80
Coeff. of Variation		4.1%
Sample Size		2880
Percentiles		
Millimeters		Inches
1200.70	1st	47.27
1212.70	2nd	47.74
1221.30	3rd	48.08
1233.70	5th	48.57
1254.10	10th	49.37
1268.30	15th	49.93
1279.70	20th	50.38
1289.50	25th	50.77
1298.20	30th	51.11
1306.20	35th	51.43
1313.70	40th	51.72
1320.80	45th	52.00
1327.90	50th	52.28
1334.80	55th	52.55
1341.70	60th	52.82
1348.80	65th	53.10
1356.20	70th	53.39
1364.10	75th	53.70
1372.80	80th	54.05
1382.90	85th	54.44
1395.60	90th	54.94
1415.10	95th	55.71
1428.30	97th	56.23
1438.50	98th	56.63
1455.80	99th	57.31

(53) Popliteal Height

The vertical distance from a footrest surface to the back of the right knee (the popliteal fossa at the dorsal juncture of the right calf and thigh) is measured with an anthropometer. The subject sits with the thighs parallel, the feet in line with the thighs, and the knees flexed 90 degrees.





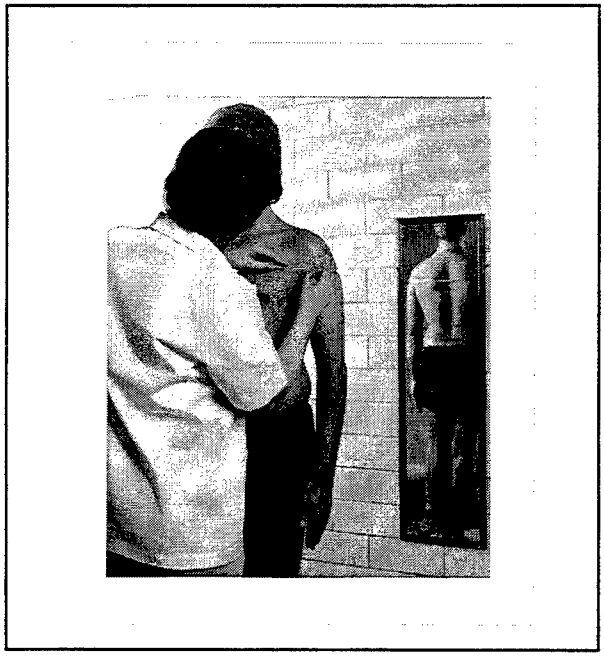
Popliteal Height

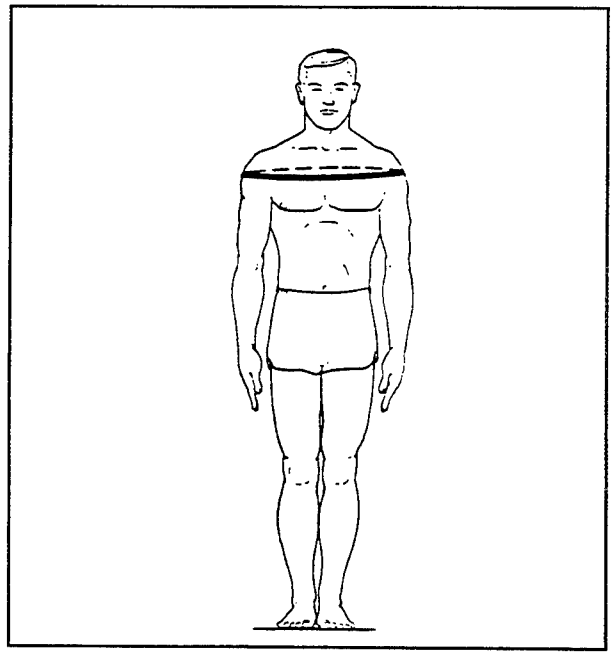
Males		
Millimeters		Inches
434.00	Mean	17.09
1.30	SE(Mean)	0.05
24.50	SD(Mean)	0.96
0.91	SE(SD)	0.04
339.00	Minimum	13.35
540.00	Maximum	21.26
Symmetry-Veta I		0.90
Kurtosis-Veta II		1.10
Coeff. of Variation		5.6%
Sample Size		4445
Percentiles		
Millimeters		Inches
377.50	1st	14.86
384.30	2nd	15.13
388.60	3rd	15.30
394.50	5th	15.53
403.40	10th	15.88
409.30	15th	16.11
414.00	20th	16.30
418.00	25th	16.46
421.60	30th	16.60
424.90	35th	16.73
428.10	40th	16.85
431.10	45th	16.97
434.10	50th	17.09
437.10	55th	17.21
440.20	60th	17.33
443.40	65th	17.46
446.80	70th	17.59
450.50	75th	17.74
454.70	80th	17.90
459.60	85th	18.09
466.00	90th	18.35
475.80	95th	18.73
482.50	97th	19.00
487.60	98th	19.20
496.10	99th	19.53

Females		
Millimeters		Inches
388.00	Mean	15.28
1.20	SE(Mean)	0.05
22.70	SD(Mean)	0.89
0.87	SE(SD)	0.03
324.00	Minimum	12.76
500.00	Maximum	19.69
Symmetry-Veta I		2.30
Kurtosis-Veta II		1.20
Coeff. of Variation		5.8%
Sample Size		2887
Percentiles		
Millimeters		Inches
337.60	1st	13.29
343.60	2nd	13.53
347.30	3rd	13.67
352.40	5th	13.87
360.00	10th	14.17
365.20	15th	14.38
369.30	20th	14.54
372.90	25th	14.68
376.20	30th	14.81
379.20	35th	14.93
382.10	40th	15.04
384.90	45th	15.15
387.70	50th	15.26
390.60	55th	15.38
393.50	60th	15.49
396.60	65th	15.61
399.90	70th	15.74
403.50	75th	15.89
407.60	80th	16.05
412.40	85th	16.24
418.60	90th	16.48
428.00	95th	16.85
434.20	97th	17.09
438.80	98th	17.28
446.00	99th	17.56

(54) Shoulder Circumference

The horizontal circumference of the shoulders at the level of the maximum protrusion of the right deltoid muscle is measured with a tape. The subject stands erect looking straight ahead. The shoulders and upper extremities are relaxed with the palms facing the thighs. The measurement is taken at the maximum point of quiet respiration.





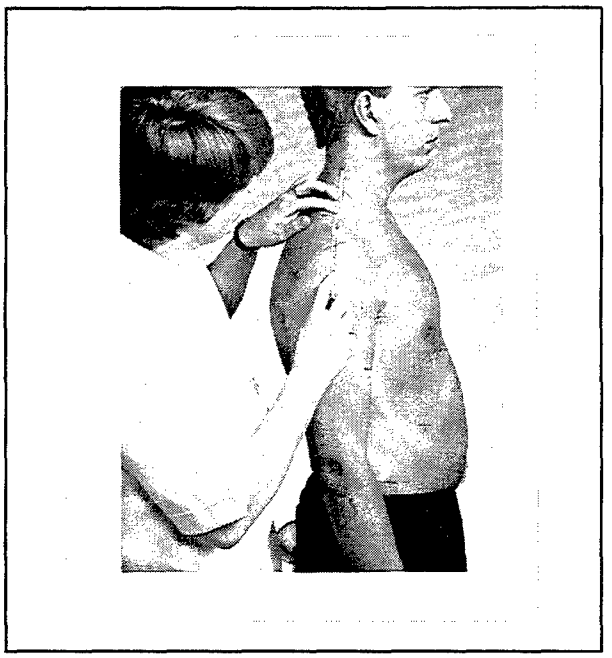
Shoulder Circumference

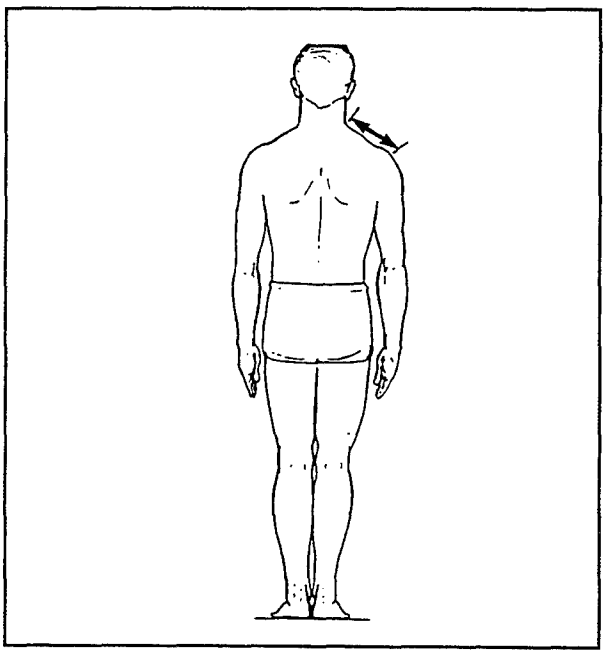
Males		
Millimeters		Inches
1178.00	Mean	46.38
3.10	SE(Mean)	0.12
58.30	SD(Mean)	2.30
2.16	SE(SD)	0.08
966.00	Minimum	38.03
1424.00	Maximum	56.06
Symmetry-Veta I		1.30
Kurtosis-Veta II		2.50
Coeff. of Variation		5.0%
Sample Size		4447
Percentiles		
Millimeters		Inches
1043.60	1st	41.09
1060.20	2nd	41.74
1070.60	3rd	42.15
1084.50	5th	42.70
1105.70	10th	43.53
1119.70	15th	44.08
1130.70	20th	44.52
1140.10	25th	44.89
1148.50	30th	45.22
1156.20	35th	45.52
1163.60	40th	45.81
1170.70	45th	46.09
1177.70	50th	46.37
1184.80	55th	46.65
1192.00	60th	46.93
1199.50	65th	47.22
1207.40	70th	47.54
1216.20	75th	47.88
1226.20	80th	48.28
1238.10	85th	48.74
1253.60	90th	49.35
1278.10	95th	50.32
1295.10	97th	50.99
1308.30	98th	51.51
1330.40	99th	52.38

Females		
Millimeters		Inches
1029.00	Mean	40.51
2.80	SE(Mean)	0.11
51.80	SD(Mean)	2.04
1.98	SE(SD)	0.08
862.00	Minimum	33.94
1307.00	Maximum	51.46
Symmetry-Veta I		3.40
Kurtosis-Veta II		3.50
Coeff. of Variation		5.0%
Sample Size		2888
Percentiles		
Millimeters		Inches
921.20	1st	36.27
931.10	2nd	36.66
938.00	3rd	36.93
947.90	5th	37.32
964.20	10th	37.96
975.80	15th	38.42
985.10	20th	38.78
993.30	25th	39.11
1000.60	30th	39.39
1007.50	35th	39.67
1014.10	40th	39.93
1020.50	45th	40.18
1026.80	50th	40.43
1033.20	55th	40.68
1039.80	60th	40.94
1046.60	65th	41.20
1053.90	70th	41.49
1061.90	75th	41.81
1071.10	80th	42.17
1081.90	85th	42.59
1096.30	90th	43.16
1119.20	95th	44.06
1135.30	97th	44.70
1148.00	98th	45.20
1169.60	99th	46.05

(55) Shoulder Length

The surface distance between the trapezius landmark at the base of the side of the neck and the acromion landmark on the tip of the right shoulder is measured with a tape. The subject stands looking straight ahead. The shoulders and upper extremities are relaxed.





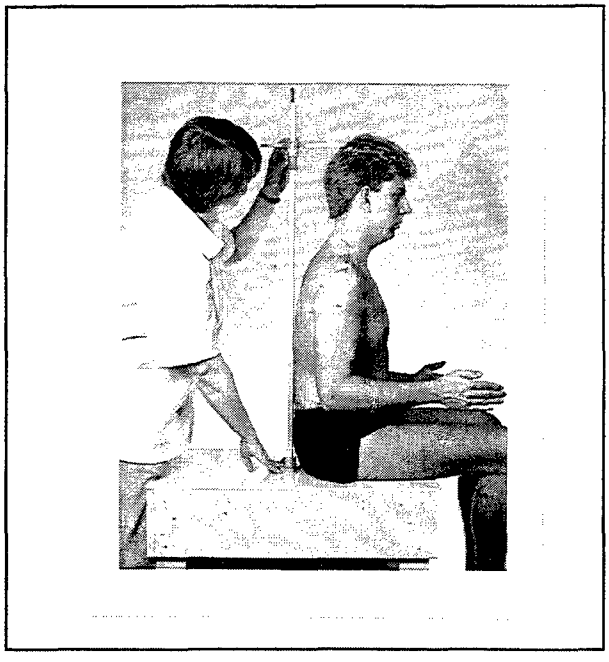
Shoulder Length

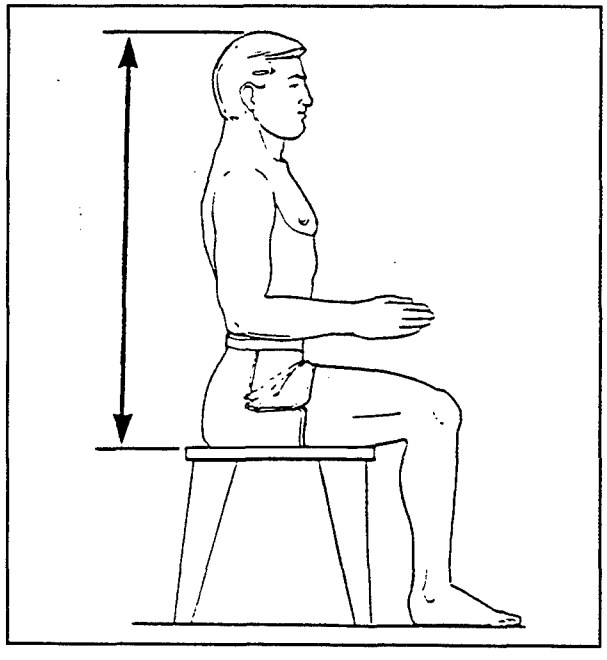
Males		
Millimeters		Inches
150.00	Mean	5.91
0.60	SE(Mean)	0.02
11.10	SD(Mean)	0.44
0.41	SE(SD)	0.02
114.00	Minimum	4.49
190.00	Maximum	7.48
Symmetry-Veta I		1.00
Kurtosis-Veta II		-0.20
Coeff. of Variation		7.4%
Sample Size		4447
Percentiles		
Millimeters		Inches
124.10	1st	4.89
127.60	2nd	5.02
129.70	3rd	5.11
132.40	5th	5.21
136.40	10th	5.37
139.00	15th	5.47
141.10	20th	5.56
142.90	25th	5.63
144.50	30th	5.69
146.00	35th	5.75
147.40	40th	5.80
148.70	45th	5.85
150.10	50th	5.91
151.50	55th	5.96
152.90	60th	6.02
154.40	65th	6.08
156.00	70th	6.14
157.70	75th	6.21
159.70	80th	6.29
162.00	85th	6.38
164.90	90th	6.49
169.40	95th	6.67
172.30	97th	6.78
174.50	98th	6.87
177.80	99th	7.00

Females		
Millimeters		Inches
144.00	Mean	5.67
0.60	SE(Mean)	0.02
11.00	SD(Mean)	0.43
0.42	SE(SD)	0.02
111.00	Minimum	4.37
182.00	Maximum	7.17
Symmetry-Veta I		-0.60
Kurtosis-Veta II		0.80
Coeff. of Variation		7.6%
Sample Size		2888
Percentiles		
Millimeters		Inches
117.70	1st	4.63
121.10	2nd	4.77
123.20	3rd	4.85
126.00	5th	4.96
130.30	10th	5.13
133.10	15th	5.24
135.30	20th	5.33
137.20	25th	5.40
138.90	30th	5.47
140.40	35th	5.53
141.80	40th	5.58
143.20	45th	5.64
144.60	50th	5.69
146.00	55th	5.75
147.40	60th	5.80
148.80	65th	5.86
150.30	70th	5.92
152.00	75th	5.98
153.80	80th	6.06
155.90	85th	6.14
158.60	90th	6.24
162.60	95th	6.40
165.20	97th	6.50
167.20	98th	6.58
170.20	99th	6.70

(56) Sitting Height

The vertical distance between a sitting surface and the top of the head is measured with an anthropometer. The subject sits erect with the head in the Frankfort plane. The shoulders and upper arms are relaxed and the forearms and hands are extended forward horizontally with the palms facing each other. The thighs are parallel and the knees are flexed 90 degrees with the feet in line with the thighs. The measurement is made at the maximum point of quiet respiration.





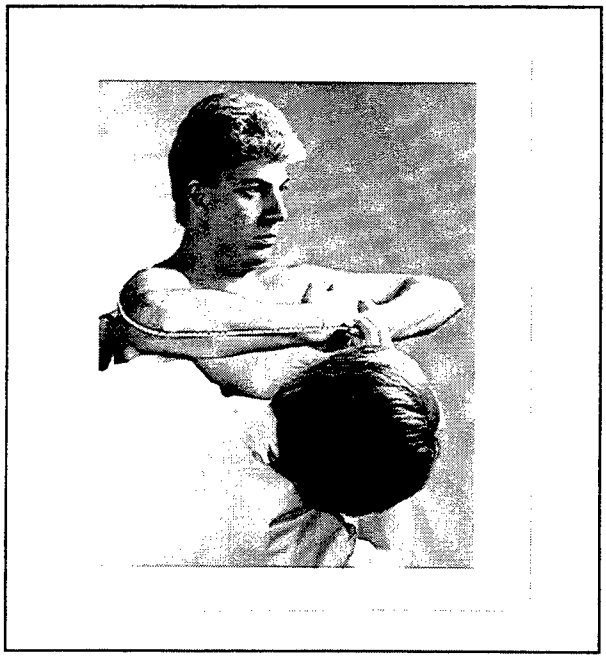
Sitting Height

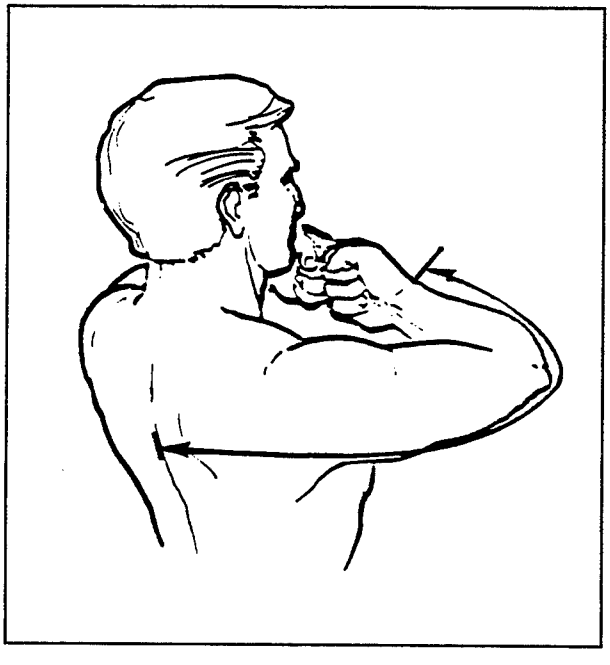
Males		
Millimeters		Inches
917.00	Mean	36.10
1.80	SE(Mean)	0.07
34.80	SD(Mean)	1.37
1.29	SE(SD)	0.05
779.00	Minimum	30.67
1041.00	Maximum	40.98
Symmetry-Veta I		-0.40
Kurtosis-Veta II		-0.20
Coeff. of Variation		3.8%
Sample Size		4445
Percentiles		
Millimeters		Inches
834.90	1st	32.87
844.90	2nd	33.26
851.20	3rd	33.51
859.60	5th	33.84
872.60	10th	34.35
881.20	15th	34.69
888.10	20th	34.96
894.00	25th	35.20
899.20	30th	35.40
904.10	35th	35.59
908.80	40th	35.78
913.20	45th	35.95
917.60	50th	36.13
922.10	55th	36.30
926.50	60th	36.48
931.20	65th	36.66
936.00	70th	36.85
941.30	75th	37.06
947.10	80th	37.29
953.80	85th	37.55
962.30	90th	37.89
974.50	95th	38.37
982.20	97th	38.67
987.80	98th	38.89
996.20	99th	39.22

Females		
Millimeters		Inches
857.00	Mean	33.74
1.80	SE(Mean)	0.07
33.30	SD(Mean)	1.31
1.27	SE(SD)	0.05
748.00	Minimum	29.45
963.00	Maximum	37.91
Symmetry-Veta I		-0.20
Kurtosis-Veta II		-0.50
Coeff. of Variation		3.9%
Sample Size		2888
Percentiles		
Millimeters		Inches
780.60	1st	30.73
788.50	2nd	31.04
793.80	3rd	31.25
801.50	5th	31.56
813.70	10th	32.04
822.20	15th	32.37
828.90	20th	32.63
834.80	25th	32.87
839.90	30th	33.07
844.70	35th	33.26
849.20	40th	33.43
853.50	45th	33.60
857.70	50th	33.77
861.90	55th	33.93
866.10	60th	34.10
870.40	65th	34.27
874.90	70th	34.44
879.80	75th	34.64
885.20	80th	34.85
891.50	85th	35.10
899.50	90th	35.41
911.60	95th	35.89
919.80	97th	36.21
926.20	98th	36.46
936.70	99th	36.88

(57) Sleeve Length: Spine-Wrist

The horizontal surface distance from the midspine landmark, across the olecranon-center landmark at the tip of the raised right elbow, to the dorsal wrist landmark is measured with a tape. The measurement is made while the subject holds his/her arms up in a horizontal position parallel to the standing surface and joins them by bringing the fists together at the metacarpophalangeal and proximal interphalangeal knuckles. The forearms and fists are in a straight line.





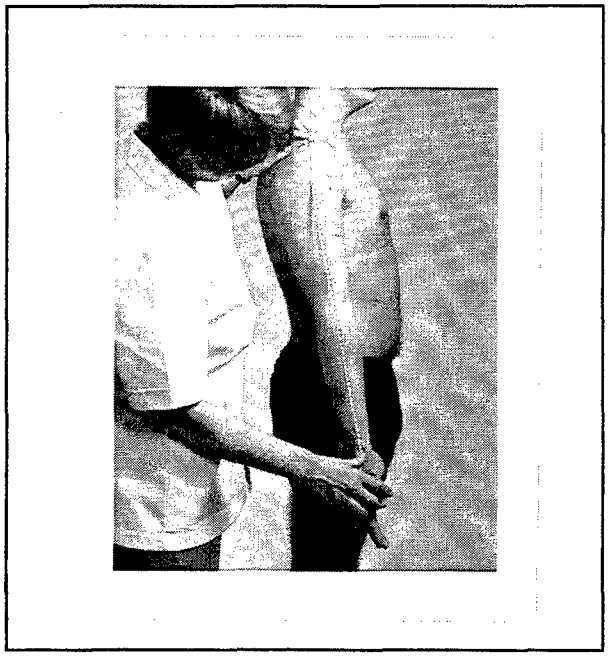
Sleeve Length: Spine-Wrist

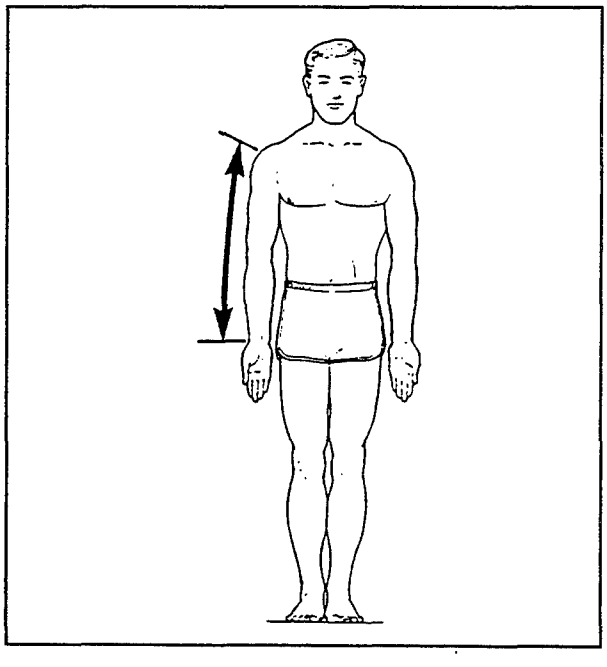
Males		
Millimeters		Inches
886.00	Mean	34.88
1.90	SE(Mean)	0.07
37.10	SD(Mean)	1.46
1.37	SE(SD)	0.05
735.00	Minimum	28.94
1037.00	Maximum	40.83
Symmetry-Veta I		-0.40
Kurtosis-Veta II		0.70
Coeff. of Variation		4.2%
Sample Size		4447
Percentiles		
Millimeters		Inches
798.20	1st	31.43
809.20	2nd	31.86
816.00	3rd	32.13
825.10	5th	32.48
838.90	10th	33.03
848.00	15th	33.39
855.20	20th	33.67
861.50	25th	33.92
867.00	30th	34.13
872.10	35th	34.33
877.00	40th	34.53
881.70	45th	34.71
886.40	50th	34.90
891.10	55th	35.08
895.80	60th	35.27
900.70	65th	35.46
905.90	70th	35.67
911.50	75th	35.89
917.90	80th	36.14
925.20	85th	36.43
934.50	90th	36.79
948.20	95th	37.33
957.10	97th	37.68
963.60	98th	37.94
973.70	99th	38.33

Females		
Millimeters		Inches
805.00	Mean	31.69
1.90	SE(Mean)	0.07
35.30	SD(Mean)	1.39
1.35	SE(SD)	0.05
682.00	Minimum	26.85
948.00	Maximum	37.32
Symmetry-Veta I		0.60
Kurtosis-Veta II		-0.90
Coeff. of Variation		4.4%
Sample Size		2888
Percentiles		
Millimeters		Inches
725.60	1st	28.57
734.60	2nd	28.92
740.30	3rd	29.15
748.00	5th	29.45
760.20	10th	29.93
768.50	15th	30.26
775.20	20th	30.52
781.00	25th	30.75
786.30	30th	30.96
791.20	35th	31.15
796.00	40th	31.34
800.60	45th	31.52
805.10	50th	31.70
809.70	55th	31.88
814.40	60th	32.06
819.20	65th	32.25
824.30	70th	32.45
829.90	75th	32.67
836.00	80th	32.91
843.10	85th	33.19
852.00	90th	33.54
864.70	95th	34.04
872.60	97th	34.35
878.10	98th	34.57
886.30	99th	34.89

(58) Sleeve Outseam

The straight-line distance between the acromion landmark on the tip of the right shoulder and the stylion landmark on the right wrist is measured with a tape. The subject stands erect with both arms straight at the sides and the palms facing forward.





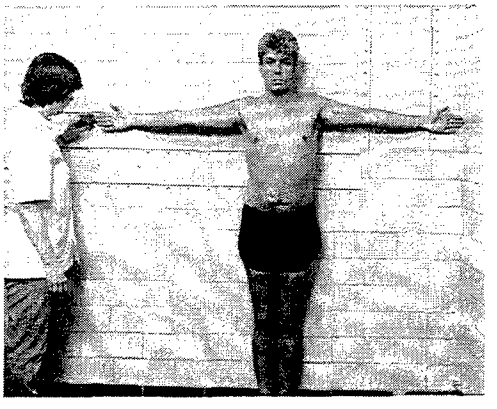
Sleeve Outseam

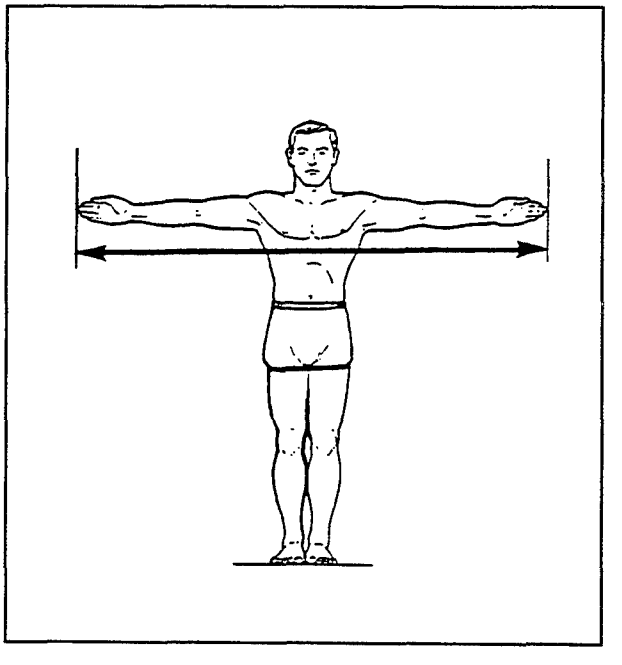
Males		
Millimeters		Inches
601.00	Mean	23.66
1.60	SE(Mean)	0.06
30.00	SD(Mean)	1.18
1.11	SE(SD)	0.04
480.00	Minimum	18.90
715.00	Maximum	28.15
Symmetry-Veta I		0.40
Kurtosis-Veta II		-0.40
Coeff. of Variation		5.0%
Sample Size		4447
Percentiles		
Millimeters		Inches
533.00	1st	20.98
540.20	2nd	21.27
545.00	3rd	21.46
551.70	5th	21.72
562.40	10th	22.14
569.70	15th	22.43
575.50	20th	22.66
580.60	25th	22.86
585.10	30th	23.04
589.30	35th	23.20
593.30	40th	23.36
597.10	45th	23.51
600.90	50th	23.66
604.70	55th	23.81
608.50	60th	23.96
612.50	65th	24.11
616.70	70th	24.28
621.20	75th	24.46
626.30	80th	24.66
632.20	85th	24.89
639.80	90th	25.19
651.40	95th	25.65
659.20	97th	25.95
665.10	98th	26.19
674.80	99th	26.57

Females		
Millimeters		Inches
545.00	Mean	21.46
1.60	SE(Mean)	0.06
29.20	SD(Mean)	1.15
1.12	SE(SD)	0.04
454.00	Minimum	17.87
678.00	Maximum	26.69
Symmetry-Veta I		1.70
Kurtosis-Veta II		0.60
Coeff. of Variation		5.4%
Sample Size		2887
Percentiles		
Millimeters		Inches
480.60	1st	18.92
487.70	2nd	19.20
492.30	3rd	19.38
498.60	5th	19.63
508.50	10th	20.02
515.20	15th	20.28
520.60	20th	20.50
525.30	25th	20.68
529.50	30th	20.85
533.40	35th	21.00
537.20	40th	21.15
540.80	45th	21.29
544.50	50th	21.44
548.20	55th	21.58
551.90	60th	21.73
555.80	65th	21.88
559.90	70th	22.04
564.50	75th	22.22
569.60	80th	22.43
575.60	85th	22.66
583.40	90th	22.97
595.20	95th	23.43
603.10	97th	23.74
609.00	98th	23.98
618.60	99th	24.35

(59) Span

The distance between the tips of the middle fingers of the horizontally outstretched arms is measured on a wall chart. The subject stands erect with his/her back against a wall-mounted scale and with the heels together. Both arms and hands are stretched horizontally against a back wall with the tip of the middle finger of one hand just touching a side wall. A block is placed at the tip of the middle finger of the other hand to establish the measurement on the scale. The measurement is taken at the maximum point of quiet respiration.





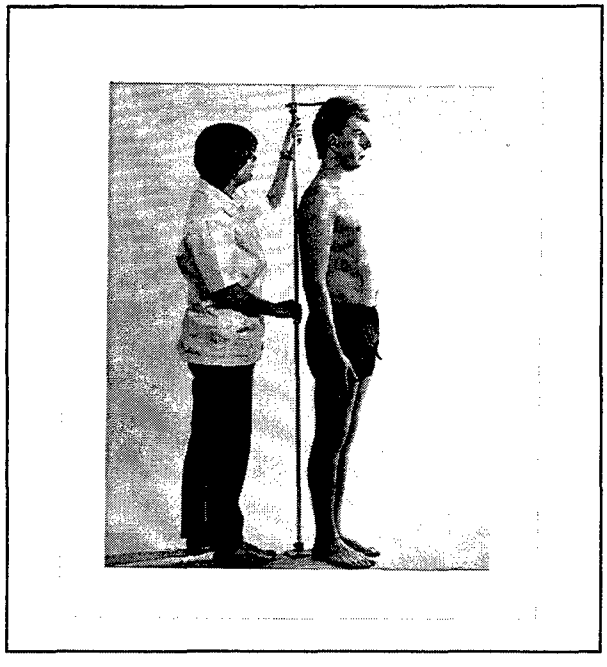
Span

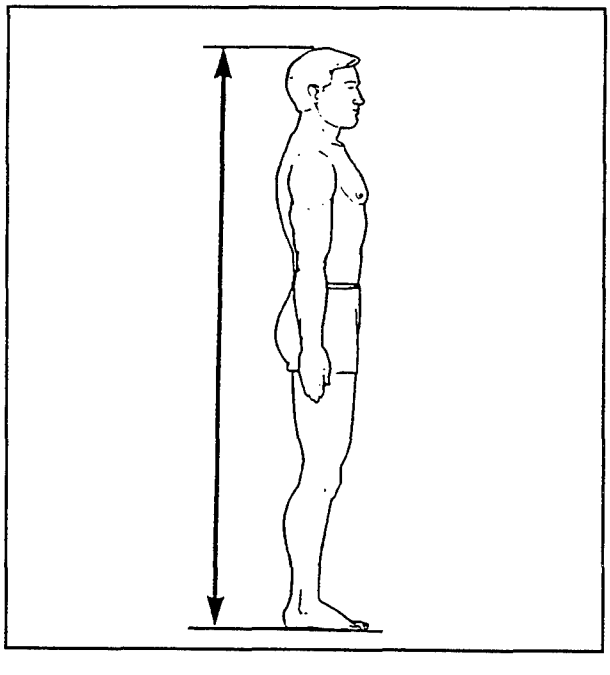
Males		
Millimeters		Inches
1821.00	Mean	71.69
4.10	SE(Mean)	0.16
78.80	SD(Mean)	3.10
2.92	SE(SD)	0.11
1523.00	Minimum	59.96
2125.00	Maximum	83.66
Symmetry-Veta I		0.30
Kurtosis-Veta II		0.00
Coeff. of Variation		4.3%
Sample Size		4429
Percentiles		
Millimeters		Inches
1640.20	1st	64.57
1661.10	2nd	65.40
1674.50	3rd	65.93
1692.70	5th	66.64
1720.70	10th	67.74
1739.80	15th	68.50
1754.80	20th	69.09
1767.90	25th	69.60
1779.60	30th	70.06
1790.50	35th	70.49
1800.80	40th	70.90
1810.80	45th	71.29
1820.70	50th	71.68
1830.70	55th	72.07
1840.80	60th	72.47
1851.30	65th	72.89
1862.30	70th	73.32
1874.40	75th	73.80
1887.90	80th	74.33
1903.70	85th	74.95
1923.80	90th	75.74
1953.90	95th	76.93
1973.70	97th	77.70
1988.40	98th	78.28
2011.80	99th	79.20

Females		
Millimeters		Inches
1665.00	Mean	65.55
4.30	SE(Mean)	0.17
78.60	SD(Mean)	3.09
3.01	SE(SD)	0.12
1424.00	Minimum	56.06
1996.00	Maximum	78.58
Symmetry-Veta I		1.50
Kurtosis-Veta II		0.70
Coeff. of Variation		4.7%
Sample Size		2879
Percentiles		
Millimeters		Inches
1489.70	1st	58.65
1509.80	2nd	59.44
1522.50	3rd	59.94
1539.90	5th	60.63
1566.80	10th	61.69
1585.10	15th	62.41
1599.60	20th	62.98
1612.30	25th	63.48
1623.60	30th	63.92
1634.20	35th	64.34
1644.30	40th	64.74
1654.00	45th	65.12
1663.80	50th	65.50
1673.60	55th	65.89
1683.60	60th	66.28
1694.10	65th	66.70
1705.20	70th	67.13
1717.30	75th	67.61
1731.00	80th	68.15
1747.20	85th	68.79
1768.00	90th	69.61
1799.70	95th	70.85
1821.00	97th	71.69
1837.00	98th	72.32
1862.90	99th	73.34

(60) Stature

The vertical distance from a standing surface to the top of the head is measured with an anthropometer. The subject stands erect with the head in the Frankfort plane. The heels are together with the weight distributed equally on both feet. The shoulders and upper extremities are relaxed. The measurement is taken at the maximum point of quiet respiration.





Stature

Males		
Millimeters		Inches
1759.00	Mean	69.25
3.50	SE(Mean)	0.14
66.50	SD(Mean)	2.62
2.46	SE(SD)	0.10
1513.00	Minimum	59.57
1980.00	Maximum	77.95
Symmetry-Veta I		0.20
Kurtosis-Veta II		-0.90
Coeff. of Variation		3.8%
Sample Size		4447

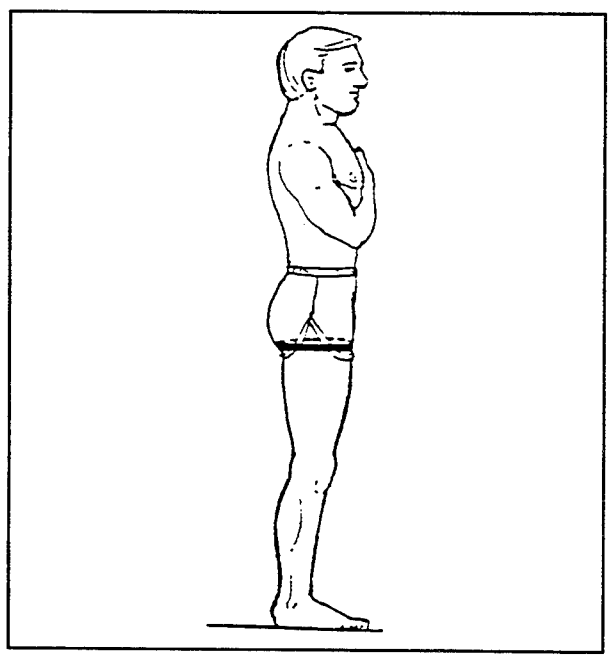
Percentiles		
Millimeters		Inches
1607.90	1st	63.30
1623.80	2nd	63.93
1634.40	3rd	64.35
1649.20	5th	64.93
1672.80	10th	65.86
1689.10	15th	66.50
1702.10	20th	67.01
1713.40	25th	67.46
1723.60	30th	67.86
1732.90	35th	68.22
1741.90	40th	68.58
1750.50	45th	68.92
1759.00	50th	69.25
1767.50	55th	69.59
1776.10	60th	69.93
1784.90	65th	70.27
1794.30	70th	70.64
1804.30	75th	71.04
1815.60	80th	71.48
1828.60	85th	71.99
1845.10	90th	72.64
1869.60	95th	73.61
1885.70	97th	74.24
1897.70	98th	74.71
1917.00	99th	75.47

Females		
Millimeters		Inches
1631.00	Mean	64.21
3.30	SE(Mean)	0.13
61.90	SD(Mean)	2.44
2.36	SE(SD)	0.09
1460.00	Minimum	57.48
1836.00	Maximum	72.28
Symmetry-Veta I		0.80
Kurtosis-Veta II		-0.40
Coeff. of Variation		3.8%
Sample Size		2888

Percentiles		
Millimeters		Inches
1486.70	1st	58.53
1504.10	2nd	59.22
1515.10	3rd	59.65
1529.90	5th	60.23
1552.40	10th	61.12
1567.50	15th	61.71
1579.40	20th	62.18
1589.60	25th	62.58
1598.80	30th	62.94
1607.20	35th	63.28
1615.30	40th	63.59
1623.00	45th	63.90
1630.80	50th	64.20
1638.50	55th	64.51
1646.40	60th	64.82
1654.50	65th	65.14
1663.20	70th	65.48
1672.60	75th	65.85
1683.30	80th	66.27
1695.70	85th	66.76
1711.70	90th	67.39
1736.00	95th	68.35
1752.10	97th	68.98
1764.30	98th	69.46
1783.80	99th	70.23

(61) Thigh Circumference

The circumference of the right thigh at its juncture with the buttock is measured with a tape. The measurement is made perpendicular to the long axis of the thigh. The subject stands erect with the weight distributed equally on both feet. The legs are spread apart just enough so that the thighs do not touch.



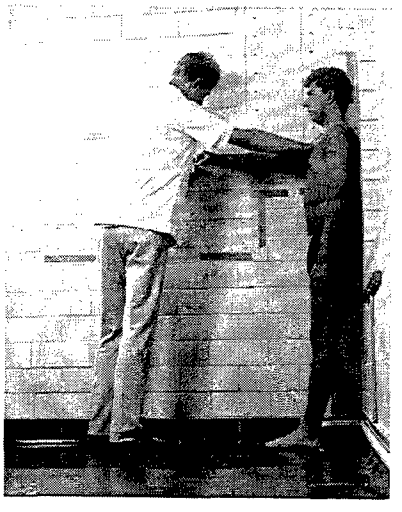
Thigh Circumference

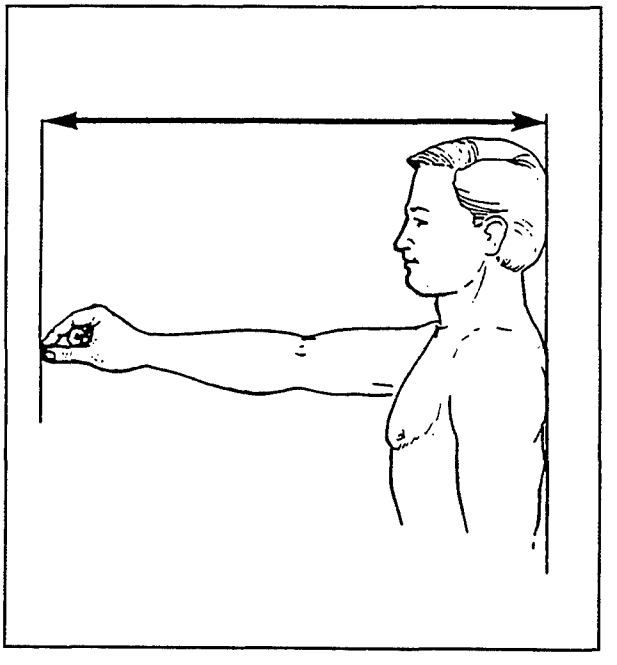
Males		
Millimeters		Inches
599.00	Mean	23.58
2.50	SE(Mean)	0.10
47.40	SD(Mean)	1.87
1.75	SE(SD)	0.07
458.00	Minimum	18.03
791.00	Maximum	31.14
Symmetry-Veta I		1.30
Kurtosis-Veta II		0.40
Coeff. of Variation		7.9%
Sample Size		4445
Percentiles		
Millimeters		Inches
494.20	1st	19.46
504.30	2nd	19.85
511.50	3rd	20.14
521.70	5th	20.54
538.50	10th	21.20
550.10	15th	21.66
559.40	20th	22.02
567.50	25th	22.34
574.70	30th	22.63
581.30	35th	22.89
587.50	40th	23.13
593.60	45th	23.37
599.50	50th	23.60
605.40	55th	23.83
611.30	60th	24.07
617.40	65th	24.31
623.90	70th	24.56
630.90	75th	24.84
638.70	80th	25.15
647.90	85th	25.51
659.90	90th	25.98
678.70	95th	26.72
691.80	97th	27.24
702.10	98th	27.64
719.80	99th	28.34

Females		
Millimeters		Inches
580.00	Mean	22.83
2.40	SE(Mean)	0.09
44.00	SD(Mean)	1.73
1.68	SE(SD)	0.07
448.00	Minimum	17.64
748.00	Maximum	29.45
Symmetry-Veta I		2.80
Kurtosis-Veta II		1.60
Coeff. of Variation		7.6%
Sample Size		2886
Percentiles		
Millimeters		Inches
485.80	1st	19.13
494.90	2nd	19.48
501.20	3rd	19.73
510.20	5th	20.09
525.00	10th	20.67
535.20	15th	21.07
543.40	20th	21.39
550.50	25th	21.67
556.90	30th	21.93
562.80	35th	22.16
568.40	40th	22.38
573.90	45th	22.59
579.20	50th	22.80
584.60	55th	23.02
590.10	60th	23.23
595.80	65th	23.46
601.80	70th	23.69
608.50	75th	23.96
616.10	80th	24.26
625.10	85th	24.61
637.10	90th	25.08
656.40	95th	25.84
670.30	97th	26.39
681.40	98th	26.83
700.50	99th	27.58

(62) Thumbtip Reach

The horizontal distance from a back wall to the tip of the right thumb is measured on a wall scale. The subject stands erect in a corner looking straight ahead with the feet together and the heels 20 cm from the back wall. The buttocks and shoulders are against the wall. The right arm and hand, palm down, are stretched forward horizontally along a scale on the side wall. The thumb continues the horizontal line of the arm and the index finger curves around to touch the pad at the end of thumb. The subject's right shoulder is held against the rear wall.





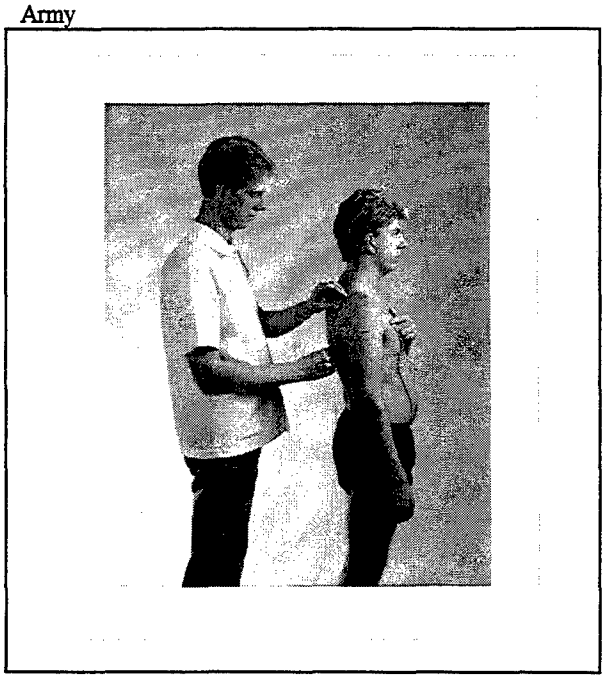
Thumbtip Reach

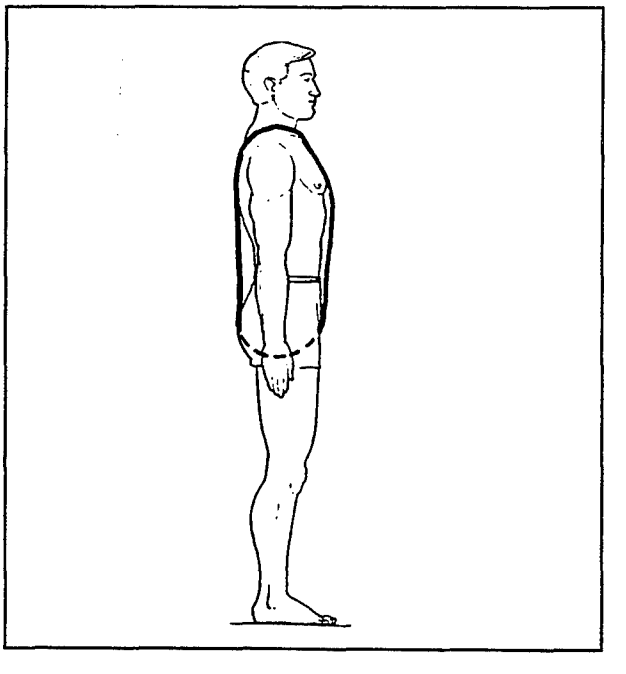
Males		
Millimeters		Inches
799.00	Mean	31.46
2.00	SE(Mean)	0.08
38.10	SD(Mean)	1.50
1.41	SE(SD)	0.06
648.00	Minimum	25.51
947.00	Maximum	37.28
Symmetry-Veta I		0.60
Kurtosis-Veta II		0.10
Coeff. of Variation		4.8%
Sample Size		4428
Percentiles		
Millimeters		Inches
714.00	1st	28.11
722.80	2nd	28.46
728.70	3rd	28.69
737.10	5th	29.02
750.60	10th	29.55
759.90	15th	29.92
767.40	20th	30.21
773.80	25th	30.46
779.50	30th	30.69
784.80	35th	30.90
789.90	40th	31.10
794.70	45th	31.29
799.50	50th	31.48
804.30	55th	31.67
809.10	60th	31.85
814.00	65th	32.05
819.30	70th	32.26
824.90	75th	32.48
831.30	80th	32.73
838.70	85th	33.02
848.30	90th	33.40
862.90	95th	33.97
872.90	97th	34.37
880.60	98th	34.67
893.50	99th	35.18

Females		
Millimeters		Inches
732.00	Mean	28.82
1.90	SE(Mean)	0.07
35.60	SD(Mean)	1.40
1.36	SE(SD)	0.05
611.00	Minimum	24.06
898.00	Maximum	35.35
Symmetry-Veta I		2.60
Kurtosis-Veta II		0.60
Coeff. of Variation		4.9%
Sample Size		2879
Percentiles		
Millimeters		Inches
659.90	1st	25.98
665.60	2nd	26.20
669.80	3rd	26.37
676.10	5th	26.62
686.90	10th	27.04
694.70	15th	27.35
701.20	20th	27.61
706.90	25th	27.83
712.10	30th	28.04
717.00	35th	28.23
721.70	40th	28.41
726.30	45th	28.59
730.80	50th	28.77
735.40	55th	28.95
740.10	60th	29.14
744.90	65th	29.33
750.10	70th	29.53
755.70	75th	29.75
762.00	80th	30.00
769.50	85th	30.30
779.10	90th	30.67
793.80	95th	31.25
803.90	97th	31.65
811.50	98th	31.95
824.20	99th	32.45

(63) Vertical Trunk Circumference (USA)*

The vertical circumference of the torso is measured with a tape passing over the maximum protrusion of the right buttock, to the right of the genitalia, over the right bustpoint landmark on women or the nipple (thelion) on men, and across the midshoulder landmark. The subject stands erect looking straight ahead with the right arm hanging relaxed at the side. The heels are together with the weight distributed equally on both feet. The measurement is taken at the maximum point of quiet respiration. *US Army





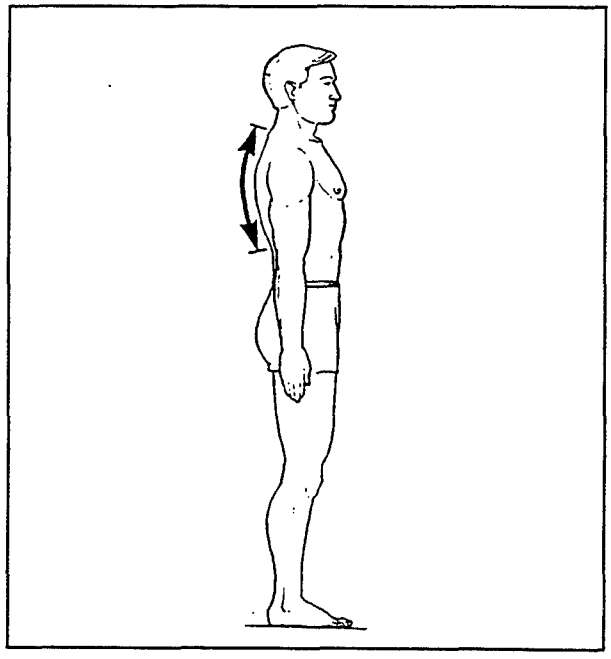
Vertical Trunk Circumference (USA)

Males		
Millimeters		Inches
1636.00	Mean	64.41
3.90	SE(Mean)	0.15
74.70	SD(Mean)	2.94
2.76	SE(SD)	0.11
1377.00	Minimum	54.21
1904.00	Maximum	74.96
Symmetry-Veta I		1.20
Kurtosis-Veta II		1.50
Coeff. of Variation		4.6%
Sample Size		4445
Percentiles		
Millimeters		Inches
1473.90	1st	58.03
1489.20	2nd	58.63
1500.10	3rd	59.06
1515.80	5th	59.68
1541.60	10th	60.69
1559.70	15th	61.41
1574.10	20th	61.97
1586.60	25th	62.46
1597.70	30th	62.90
1608.00	35th	63.31
1617.70	40th	63.69
1627.00	45th	64.06
1636.20	50th	64.42
1645.40	55th	64.78
1654.70	60th	65.15
1664.20	65th	65.52
1674.30	70th	65.92
1685.40	75th	66.35
1697.80	80th	66.84
1712.50	85th	67.42
1731.80	90th	68.18
1762.60	95th	69.39
1784.50	97th	70.26
1802.00	98th	70.94
1832.30	99th	72.14

Females		
Millimeters		Inches
1536.00	Mean	60.47
3.60	SE(Mean)	0.14
66.40	SD(Mean)	2.61
2.54	SE(SD)	0.10
1323.00	Minimum	52.09
1773.00	Maximum	69.80
Symmetry-Veta I		1.80
Kurtosis-Veta II		0.40
Coeff. of Variation		4.3%
Sample Size		2886
Percentiles		
Millimeters		Inches
1388.80	1st	54.68
1405.70	2nd	55.34
1416.50	3rd	55.77
1431.10	5th	56.34
1453.60	10th	57.23
1468.80	15th	57.83
1480.90	20th	58.30
1491.40	25th	58.72
1500.80	30th	59.09
1509.60	35th	59.43
1518.00	40th	59.76
1526.20	45th	60.09
1534.40	50th	60.41
1542.70	55th	60.74
1551.10	60th	61.07
1559.90	65th	61.41
1569.30	70th	61.78
1579.70	75th	62.19
1591.50	80th	62.66
1605.40	85th	63.20
1623.60	90th	63.92
1651.60	95th	65.02
1670.70	97th	65.78
1685.20	98th	66.35
1708.90	99th	67.28

(64) Waist Back Length (Natural Indentation)

The surface distance between the cervicale landmark at the back of the neck and the posterior-waist (natural indentation) landmark is measured with a tape. The subject stands erect with the head in the Frankfort plane. The shoulders and upper extremities are relaxed. The measurement is taken at the maximum point of quiet respiration.



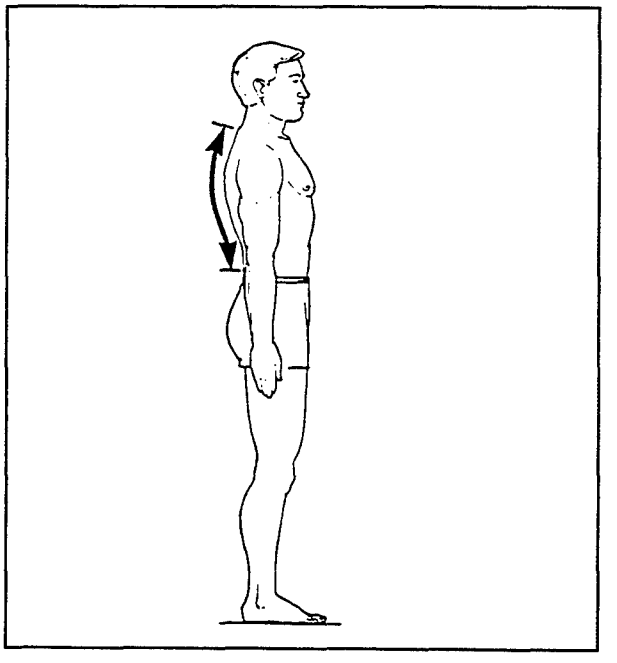
Waist Back Length (Natural Indentation)

Males		
Millimeters		Inches
413.00	Mean	16.26
1.20	SE(Mean)	0.05
22.40	SD(Mean)	0.88
0.83	SE(SD)	0.03
305.00	Minimum	12.01
493.00	Maximum	19.41
Symmetry-Veta I		0.40
Kurtosis-Veta II		1.30
Coeff. of Variation		5.4%
Sample Size		4447
Percentiles		
Millimeters		Inches
361.20	1st	14.22
367.30	2nd	14.46
371.20	3rd	14.61
376.50	5th	14.82
384.70	10th	15.15
390.20	15th	15.36
394.50	20th	15.53
398.20	25th	15.68
401.50	30th	15.81
404.50	35th	15.93
407.40	40th	16.04
410.20	45th	16.15
413.00	50th	16.26
415.80	55th	16.37
418.60	60th	16.48
421.50	65th	16.59
424.60	70th	16.72
428.00	75th	16.85
431.80	80th	17.00
436.30	85th	17.18
442.00	90th	17.40
450.90	95th	17.75
456.90	97th	17.99
461.40	98th	18.17
468.90	99th	18.46

Females		
Millimeters		Inches
369.00	Mean	14.53
1.30	SE(Mean)	0.05
24.20	SD(Mean)	0.95
0.92	SE(SD)	0.04
288.00	Minimum	11.34
465.00	Maximum	18.31
Symmetry-Veta I		1.80
Kurtosis-Veta II		0.20
Coeff. of Variation		6.6%
Sample Size		2888
Percentiles		
Millimeters		Inches
316.70	1st	12.47
322.20	2nd	12.69
325.70	3rd	12.82
330.80	5th	13.02
338.80	10th	13.34
344.40	15th	13.56
348.90	20th	13.74
352.90	25th	13.89
356.40	30th	14.03
359.80	35th	14.17
362.90	40th	14.29
366.00	45th	14.41
369.10	50th	14.53
372.10	55th	14.65
375.30	60th	14.78
378.50	65th	14.90
382.00	70th	15.04
385.70	75th	15.19
390.00	80th	15.35
394.90	85th	15.55
401.30	90th	15.80
410.80	95th	16.17
417.20	97th	16.43
422.00	98th	16.61
429.60	99th	16.91

(65) Waist Back Length (Omphalion)

The surface distance between the cervicale landmark at the back of the neck and the posterior-waist (omphalion) landmark at the level of the navel is measured with a tape. The subject stands erect with the head in the Frankfort plane. The shoulders and upper extremities are relaxed. The measurement is taken at the maximum point of quiet respiration.



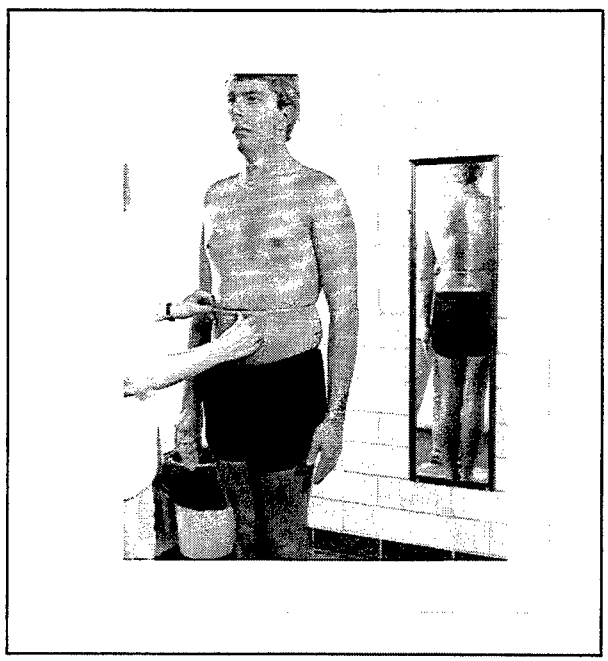
Waist Back Length (Omphalion)

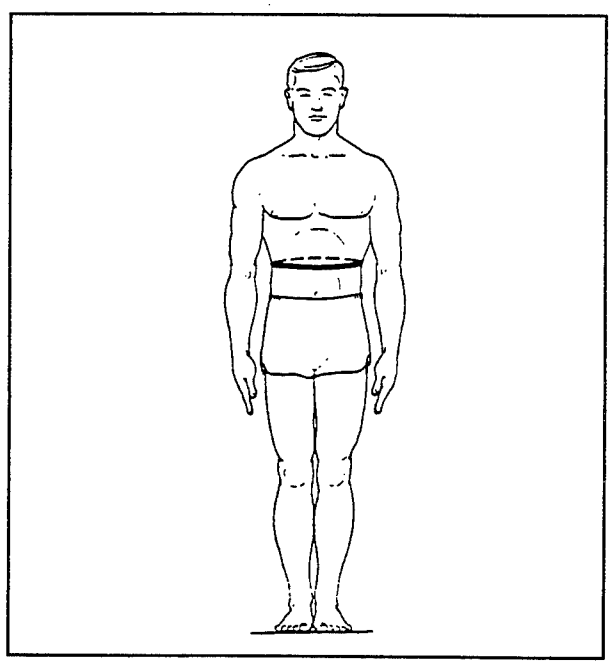
Males		
Millimeters		Inches
479.00	Mean	18.86
1.40	SE(Mean)	0.06
25.90	SD(Mean)	1.02
0.96	SE(SD)	0.04
385.00	Minimum	15.16
574.00	Maximum	22.60
Symmetry-Veta I		1.90
Kurtosis-Veta II		1.90
Coeff. of Variation		5.4%
Sample Size		4447
Percentiles		
Millimeters		Inches
421.60	1st	16.60
427.80	2nd	16.84
431.90	3rd	17.00
437.70	5th	17.23
446.70	10th	17.59
452.90	15th	17.83
457.80	20th	18.02
462.00	25th	18.19
465.80	30th	18.34
469.30	35th	18.48
472.60	40th	18.61
475.80	45th	18.73
478.90	50th	18.85
482.10	55th	18.98
485.30	60th	19.11
488.60	65th	19.24
492.20	70th	19.38
496.00	75th	19.53
500.50	80th	19.70
505.70	85th	19.91
512.60	90th	20.18
523.60	95th	20.61
531.40	97th	20.92
537.60	98th	21.17
548.10	99th	21.58

Females		
Millimeters		Inches
444.00	Mean	17.48
1.30	SE(Mean)	0.05
23.90	SD(Mean)	0.94
0.91	SE(SD)	0.04
358.00	Minimum	14.09
532.00	Maximum	20.94
Symmetry-Veta I		2.30
Kurtosis-Veta II		3.20
Coeff. of Variation		5.4%
Sample Size		2888
Percentiles		
Millimeters		Inches
391.60	1st	15.42
397.20	2nd	15.64
401.00	3rd	15.79
406.20	5th	15.99
414.50	10th	16.32
420.10	15th	16.54
424.60	20th	16.72
428.40	25th	16.87
431.80	30th	17.00
435.00	35th	17.13
438.00	40th	17.24
440.90	45th	17.36
443.80	50th	17.47
446.60	55th	17.58
449.60	60th	17.70
452.60	65th	17.82
455.90	70th	17.95
459.40	75th	18.09
463.50	80th	18.25
468.40	85th	18.44
475.00	90th	18.70
485.50	95th	19.11
493.20	97th	19.42
499.30	98th	19.66
509.90	99th	20.07

(66) Waist Circumference (Natural Indentation)

The horizontal circumference of the waist at the level of its natural indentation is measured with a tape passing over right and left waist (natural indentation) landmarks. The subject stands erect looking straight ahead. The heels are together with the weight distributed equally on both feet. The measurement is made at the maximum point of quiet respiration.





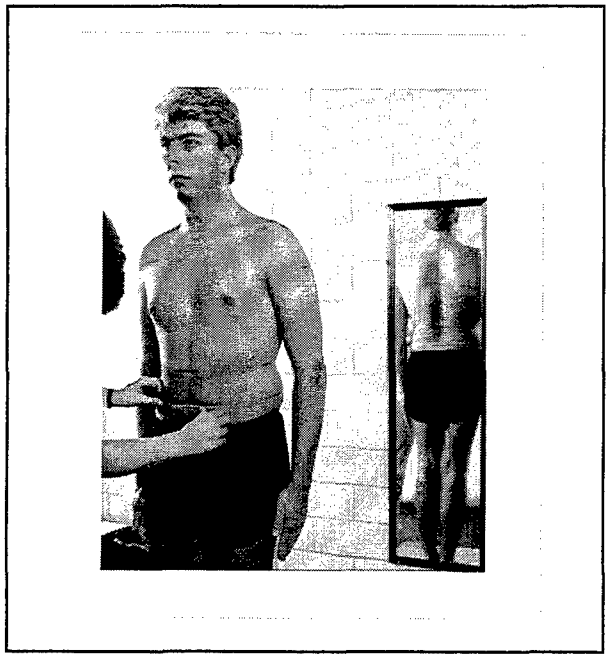
Waist Circumference (Natural Indentation)

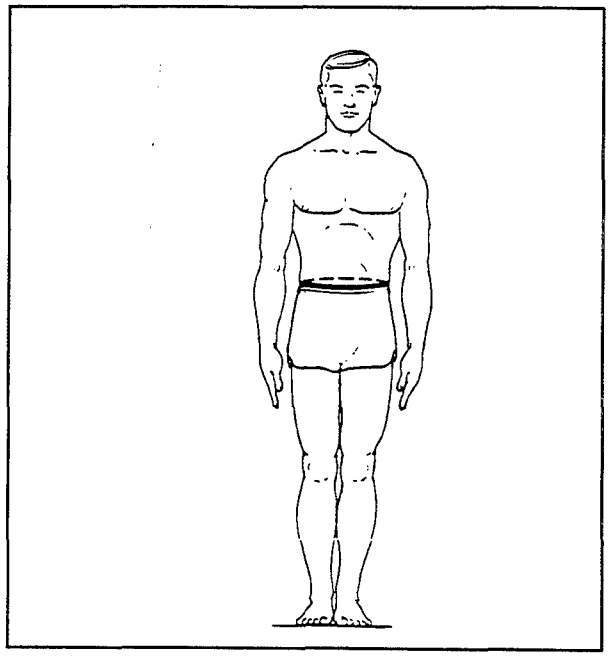
Males		
Millimeters		Inches
841.00	Mean	33.11
3.80	SE(Mean)	0.15
72.60	SD(Mean)	2.86
2.69	SE(SD)	0.11
647.00	Minimum	25.47
1240.00	Maximum	48.82
Symmetry-Veta I		4.20
Kurtosis-Veta II		0.20
Coeff. of Variation		8.6%
Sample Size		4447
Percentiles		
Millimeters		Inches
701.80	1st	27.63
713.30	2nd	28.08
721.10	3rd	28.39
732.60	5th	28.84
751.90	10th	29.60
766.10	15th	30.16
778.00	20th	30.63
788.70	25th	31.05
798.70	30th	31.44
808.20	35th	31.82
817.50	40th	32.19
826.60	45th	32.54
836.00	50th	32.91
845.50	55th	33.29
855.30	60th	33.67
865.60	65th	34.08
876.70	70th	34.52
888.90	75th	35.00
902.80	80th	35.54
919.20	85th	36.19
940.20	90th	37.02
971.80	95th	38.26
992.50	97th	39.07
1007.60	98th	39.67
1031.10	99th	40.59

Females		
Millimeters		Inches
727.00	Mean	28.62
3.30	SE(Mean)	0.13
61.90	SD(Mean)	2.44
2.36	SE(SD)	0.09
568.00	Minimum	22.36
1033.00	Maximum	40.67
Symmetry-Veta I		8.00
Kurtosis-Veta II		9.60
Coeff. of Variation		8.5%
Sample Size		2888
Percentiles		
Millimeters		Inches
614.50	1st	24.19
626.20	2nd	24.65
633.20	3rd	24.93
642.50	5th	25.30
656.80	10th	25.86
666.90	15th	26.26
675.20	20th	26.58
682.80	25th	26.88
690.00	30th	27.17
697.00	35th	27.44
703.90	40th	27.71
710.90	45th	27.99
718.10	50th	28.27
725.70	55th	28.57
733.70	60th	28.89
742.40	65th	29.23
752.00	70th	29.61
762.80	75th	30.03
775.60	80th	30.54
791.20	85th	31.15
812.10	90th	31.97
845.50	95th	33.29
868.50	97th	34.19
886.00	98th	34.88
914.40	99th	36.00

(67) Waist Circumference (Omphalion)

The horizontal circumference of the waist at the level of the center of the navel (omphalion) is measured with a tape. The subject stands erect looking straight ahead. The heels are together with the weight distributed equally on both feet. The measurement is made at the maximum point of quiet respiration.





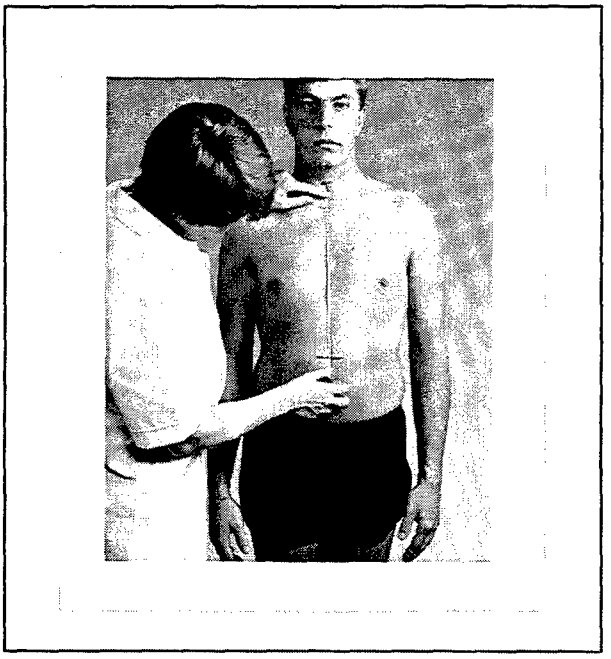
Waist Circumference (Omphalion)

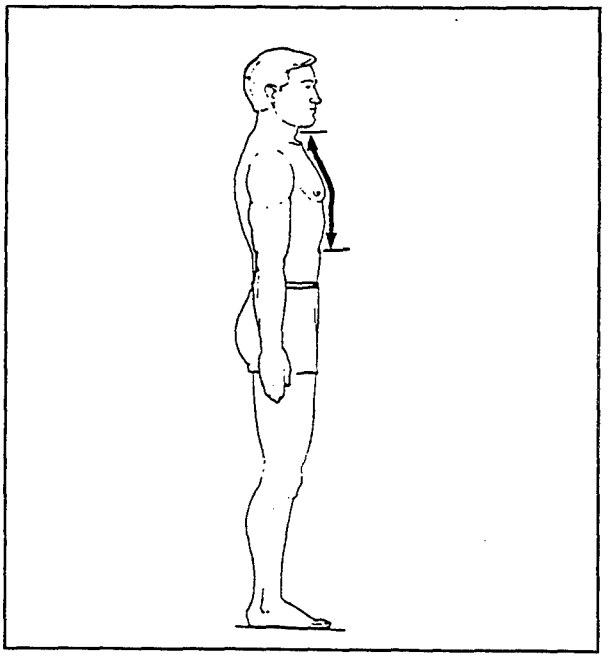
Males		
Millimeters		Inches
866.00	Mean	34.09
4.40	SE(Mean)	0.17
84.80	SD(Mean)	3.34
3.14	SE(SD)	0.12
650.00	Minimum	25.59
1281.00	Maximum	50.43
Symmetry-Veta I		4.10
Kurtosis-Veta II		-1.30
Coeff. of Variation		9.8%
Sample Size		4447
Percentiles		
Millimeters		Inches
707.30	1st	27.85
718.70	2nd	28.30
726.90	3rd	28.62
739.20	5th	29.10
760.70	10th	29.95
777.00	15th	30.59
790.80	20th	31.13
803.50	25th	31.63
815.30	30th	32.10
826.60	35th	32.54
837.60	40th	32.98
848.60	45th	33.41
859.70	50th	33.85
871.10	55th	34.30
882.80	60th	34.76
895.10	65th	35.24
908.30	70th	35.76
922.80	75th	36.33
939.30	80th	36.98
958.40	85th	37.73
982.70	90th	38.69
1018.40	95th	40.09
1040.90	97th	40.98
1057.00	98th	41.61
1081.20	99th	42.57

Females		
Millimeters		Inches
795.00	Mean	31.30
4.30	SE(Mean)	0.17
79.30	SD(Mean)	3.12
3.03	SE(SD)	0.12
610.00	Minimum	24.02
1108.00	Maximum	43.62
Symmetry-Veta I		6.90
Kurtosis-Veta II		5.60
Coeff. of Variation		10.0%
Sample Size		2888
Percentiles		
Millimeters		Inches
653.60	1st	25.73
663.80	2nd	26.13
671.30	3rd	26.43
682.40	5th	26.87
701.60	10th	27.62
715.80	15th	28.18
727.70	20th	28.65
738.40	25th	29.07
748.40	30th	29.46
757.90	35th	29.84
767.20	40th	30.20
776.50	45th	30.57
786.00	50th	30.94
795.70	55th	31.33
805.90	60th	31.73
816.80	65th	32.16
828.60	70th	32.62
842.00	75th	33.15
857.70	80th	33.77
876.80	85th	34.52
902.80	90th	35.54
945.40	95th	37.22
976.30	97th	38.44
1000.80	98th	39.40
1042.70	99th	41.05

(68) Waist Front Length (Natural Indentation)

The surface distance between the anterior-neck landmark and the anterior waist (natural indentation) landmark is measured with a tape. The subject stands erect with the head in the Frankfort plane. The measurement is made at the maximum point of quiet respiration.





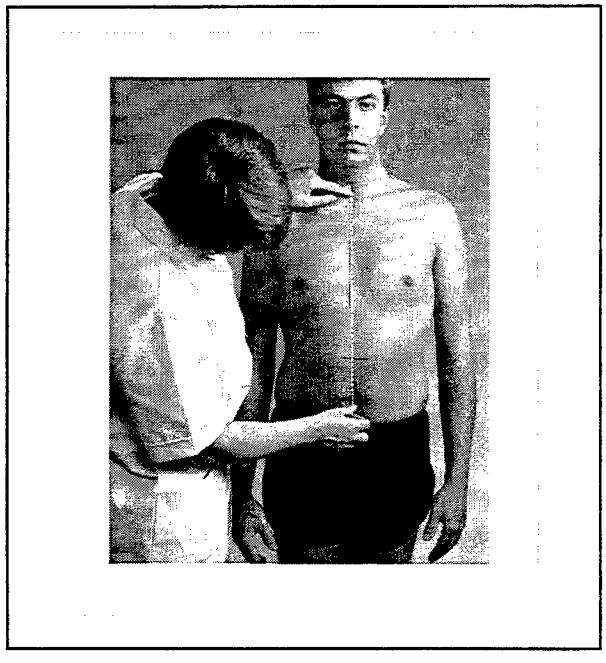
Waist Front Length (Natural Indentation)

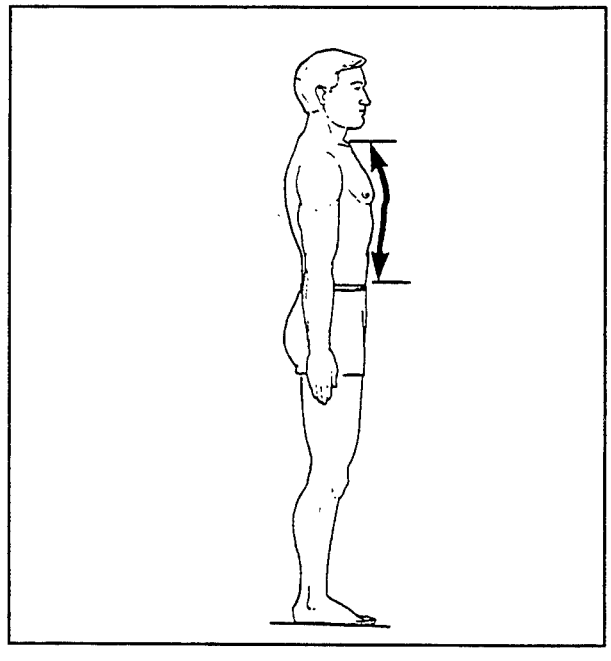
Males		
Millimeters		Inches
347.00	Mean	13.66
1.10	SE(Mean)	0.04
20.80	SD(Mean)	0.82
0.77	SE(SD)	0.03
264.00	Minimum	10.39
424.00	Maximum	16.69
Symmetry-Veta I		0.70
Kurtosis-Veta II		1.60
Coeff. of Variation		6.0%
Sample Size		4447
Percentiles		
Millimeters		Inches
299.70	1st	11.80
304.90	2nd	12.00
308.20	3rd	12.13
312.90	5th	12.32
320.30	10th	12.61
325.30	15th	12.81
329.30	20th	12.96
332.80	25th	13.10
335.90	30th	13.22
338.80	35th	13.34
341.50	40th	13.44
344.20	45th	13.55
346.80	50th	13.65
349.40	55th	13.76
352.00	60th	13.86
354.70	65th	13.96
357.60	70th	14.08
360.70	75th	14.20
364.20	80th	14.34
368.30	85th	14.50
373.50	90th	14.70
381.40	95th	15.02
386.70	97th	15.22
390.80	98th	15.39
397.40	99th	15.65

Females		
Millimeters		Inches
314.00	Mean	12.36
1.20	SE(Mean)	0.05
22.50	SD(Mean)	0.89
0.86	SE(SD)	0.03
237.00	Minimum	9.33
404.00	Maximum	15.91
Symmetry-Veta I		1.50
Kurtosis-Veta II		2.60
Coeff. of Variation		7.2%
Sample Size		2888
Percentiles		
Millimeters		Inches
265.40	1st	10.45
269.90	2nd	10.63
273.10	3rd	10.75
277.90	5th	10.94
285.70	10th	11.25
291.20	15th	11.46
295.60	20th	11.64
299.40	25th	11.79
302.80	30th	11.92
305.90	35th	12.04
308.80	40th	12.16
311.60	45th	12.27
314.40	50th	12.38
317.10	55th	12.48
319.90	60th	12.59
322.70	65th	12.70
325.70	70th	12.82
329.00	75th	12.95
332.70	80th	13.10
337.00	85th	13.27
342.80	90th	13.50
352.20	95th	13.87
359.00	97th	14.13
364.50	98th	14.35
374.10	99th	14.73

(69) Waist Front Length (Omphalion)

The surface distance between the anterior-neck landmark and the center of the navel (omphalion) is measured with a tape. The subject stands erect with the head in the Frankfort plane. The measurement is made at the maximum point of quiet respiration.





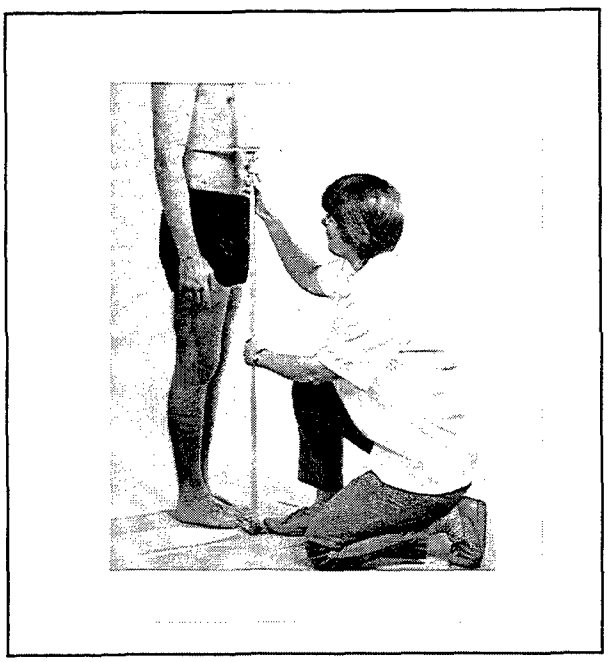
Waist Front Length (Omphalion)

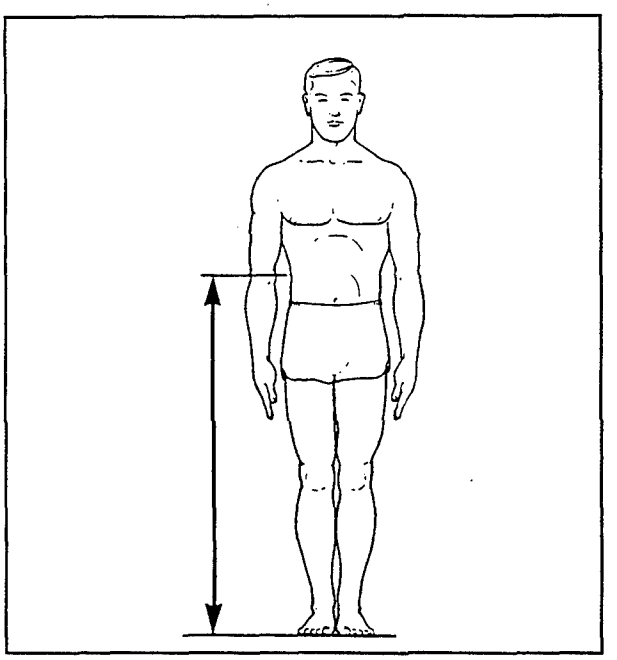
Males		
Millimeters		Inches
415.00	Mean	16.34
1.20	SE(Mean)	0.05
23.90	SD(Mean)	0.94
0.88	SE(SD)	0.03
319.00	Minimum	12.56
541.00	Maximum	21.30
Symmetry-Veta I		3.40
Kurtosis-Veta II		6.40
Coeff. of Variation		5.8%
Sample Size		4447
Percentiles		
Millimeters		Inches
363.30	1st	14.30
369.10	2nd	14.53
372.90	3rd	14.68
378.10	5th	14.89
386.10	10th	15.20
391.60	15th	15.42
395.90	20th	15.59
399.60	25th	15.73
402.90	30th	15.86
405.90	35th	15.98
408.80	40th	16.09
411.60	45th	16.20
414.40	50th	16.31
417.30	55th	16.43
420.10	60th	16.54
423.20	65th	16.66
426.40	70th	16.79
430.00	75th	16.93
434.10	80th	17.09
439.10	85th	17.29
445.80	90th	17.55
456.80	95th	17.98
464.70	97th	18.30
471.00	98th	18.54
482.00	99th	18.98

Females		
Millimeters		Inches
392.00	Mean	15.43
1.20	SE(Mean)	0.05
21.60	SD(Mean)	0.85
0.82	SE(SD)	0.03
323.00	Minimum	12.72
481.00	Maximum	18.94
Symmetry-Veta I		2.00
Kurtosis-Veta II		2.80
Coeff. of Variation		5.5%
Sample Size		2888
Percentiles		
Millimeters		Inches
343.70	1st	13.53
348.90	2nd	13.74
352.40	3rd	13.87
357.30	5th	14.07
365.00	10th	14.37
370.20	15th	14.57
374.30	20th	14.74
377.90	25th	14.88
381.00	30th	15.00
383.90	35th	15.11
386.60	40th	15.22
389.30	45th	15.33
391.90	50th	15.43
394.50	55th	15.53
397.10	60th	15.63
399.90	65th	15.74
402.80	70th	15.86
406.00	75th	15.98
409.60	80th	16.13
414.00	85th	16.30
419.70	90th	16.52
429.00	95th	16.89
435.60	97th	17.15
440.90	98th	17.36
450.10	99th	17.72

(70) Waist Height (Natural Indentation)

The vertical distance between a standing surface and the landmark at the waist (natural indentation) of the right waist is measured with an anthropometer. The subject stands erect looking straight ahead. The heels are together with the weight distributed equally on both feet. The shoulders and upper extremities are relaxed. The measurement is made at the maximum point of quiet respiration.





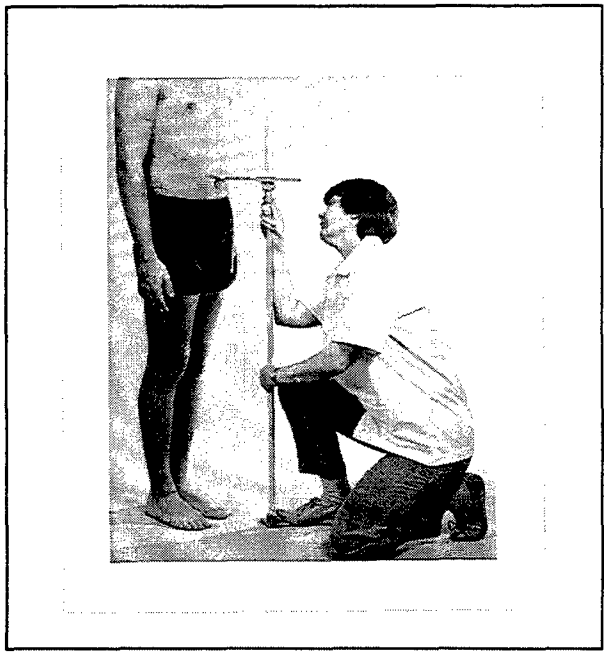
Waist Height (Natural Indentation)

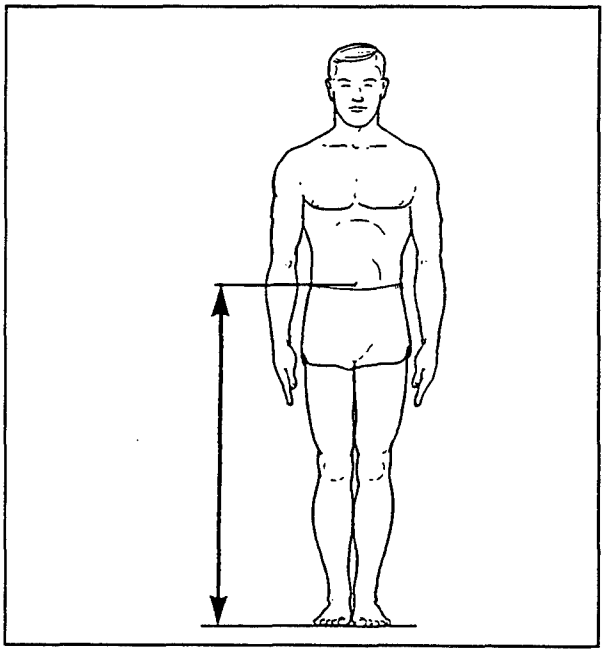
Males		
Millimeters		Inches
1127.00	Mean	44.37
2.70	SE(Mean)	0.11
51.40	SD(Mean)	2.02
1.90	SE(SD)	0.07
926.00	Minimum	36.46
1314.00	Maximum	51.73
Symmetry-Veta I		0.30
Kurtosis-Veta II		0.80
Coeff. of Variation		4.6%
Sample Size		4447
Percentiles		
Millimeters		Inches
1006.60	1st	39.63
1021.10	2nd	40.20
1030.40	3rd	40.57
1043.00	5th	41.06
1062.20	10th	41.82
1075.10	15th	42.33
1085.20	20th	42.72
1093.80	25th	43.06
1101.50	30th	43.37
1108.50	35th	43.64
1115.10	40th	43.90
1121.50	45th	44.15
1127.80	50th	44.40
1134.10	55th	44.65
1140.40	60th	44.90
1147.00	65th	45.16
1153.90	70th	45.43
1161.50	75th	45.73
1170.00	80th	46.06
1179.90	85th	46.45
1192.70	90th	46.96
1212.50	95th	47.74
1226.10	97th	48.27
1236.50	98th	48.68
1253.80	99th	49.36

Females		
Millimeters		Inches
1055.00	Mean	41.54
2.70	SE(Mean)	0.11
50.80	SD(Mean)	2.00
1.94	SE(SD)	0.08
887.00	Minimum	34.92
1265.00	Maximum	49.80
Symmetry-Veta I		0.90
Kurtosis-Veta II		-0.70
Coeff. of Variation		4.8%
Sample Size		2888
Percentiles		
Millimeters		Inches
939.60	1st	36.99
952.20	2nd	37.49
960.50	3rd	37.81
971.90	5th	38.26
990.10	10th	38.98
1002.50	15th	39.47
1012.30	20th	39.85
1020.90	25th	40.19
1028.50	30th	40.49
1035.60	35th	40.77
1042.30	40th	41.04
1048.80	45th	41.29
1055.20	50th	41.54
1061.60	55th	41.80
1068.10	60th	42.05
1074.80	65th	42.31
1081.90	70th	42.59
1089.50	75th	42.89
1098.20	80th	43.24
1108.30	85th	43.63
1121.20	90th	44.14
1140.80	95th	44.91
1154.00	97th	45.43
1164.00	98th	45.83
1180.30	99th	46.47

(71) Waist Height (Omphalion)

The vertical distance between a standing surface and the center of the navel (omphalion) is measured with an anthropometer. The subject stands erect looking straight ahead. The heels are together with the weight distributed equally on both feet. The shoulders and upper extremities are relaxed. The measurement is made at the maximum point of quiet respiration.





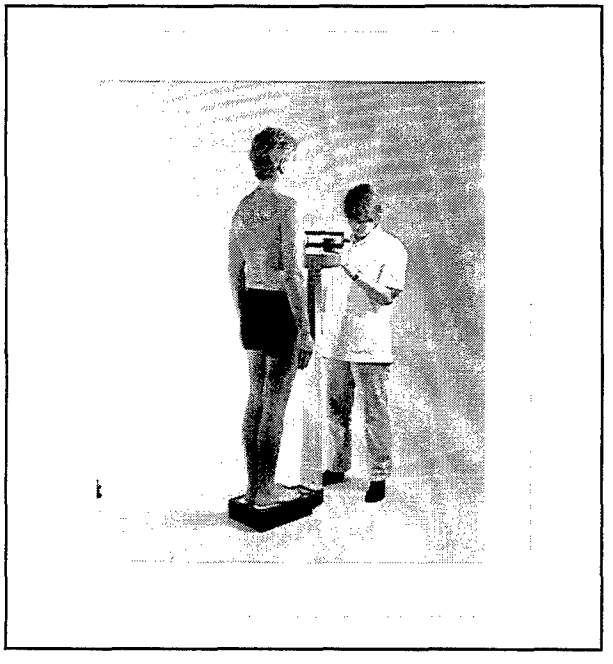
Waist Height (Omphalion)

Males		
Millimeters		Inches
1060.00	Mean	41.73
2.60	SE(Mean)	0.10
50.60	SD(Mean)	1.99
1.87	SE(SD)	0.07
861.00	Minimum	33.90
1254.00	Maximum	49.37
Symmetry-Veta I		0.10
Kurtosis-Veta II		0.90
Coeff. of Variation		4.8%
Sample Size		4447
Percentiles		
Millimeters		Inches
941.20	1st	37.06
955.50	2nd	37.62
964.50	3rd	37.97
976.70	5th	38.45
995.30	10th	39.19
1007.80	15th	39.68
1017.60	20th	40.06
1026.10	25th	40.40
1033.60	30th	40.69
1040.60	35th	40.97
1047.20	40th	41.23
1053.60	45th	41.48
1059.90	50th	41.73
1066.30	55th	41.98
1072.70	60th	42.23
1079.30	65th	42.49
1086.30	70th	42.77
1093.90	75th	43.07
1102.40	80th	43.40
1112.20	85th	43.79
1124.80	90th	44.28
1143.40	95th	45.02
1155.70	97th	45.50
1164.70	98th	45.85
1179.00	99th	46.42

Females		
Millimeters		Inches
981.00	Mean	38.62
2.60	SE(Mean)	0.10
47.40	SD(Mean)	1.87
1.81	SE(SD)	0.07
839.00	Minimum	33.03
1190.00	Maximum	46.85
Symmetry-Veta I		1.30
Kurtosis-Veta II		0.20
Coeff. of Variation		4.8%
Sample Size		2888
Percentiles		
Millimeters		Inches
872.40	1st	34.35
885.80	2nd	34.87
894.00	3rd	35.20
905.00	5th	35.63
921.50	10th	36.28
932.70	15th	36.72
941.50	20th	37.07
949.10	25th	37.37
956.00	30th	37.64
962.40	35th	37.89
968.50	40th	38.13
974.50	45th	38.37
980.50	50th	38.60
986.50	55th	38.84
992.60	60th	39.08
999.00	65th	39.33
1005.90	70th	39.60
1013.30	75th	39.89
1021.70	80th	40.22
1031.50	85th	40.61
1044.00	90th	41.10
1062.50	95th	41.83
1074.50	97th	42.30
1083.20	98th	42.65
1096.70	99th	43.18

(72) Weight

The weight of the subject is taken to the nearest tenth of a kilogram. The subject stands on the platform of a scale.



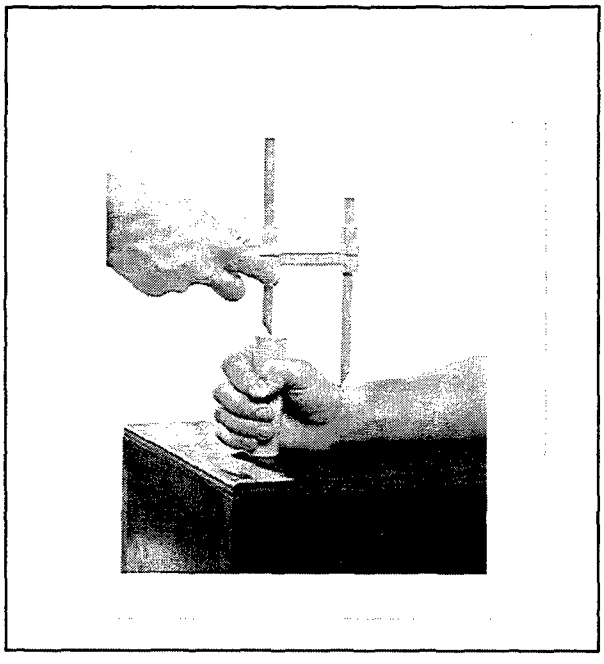
Weight

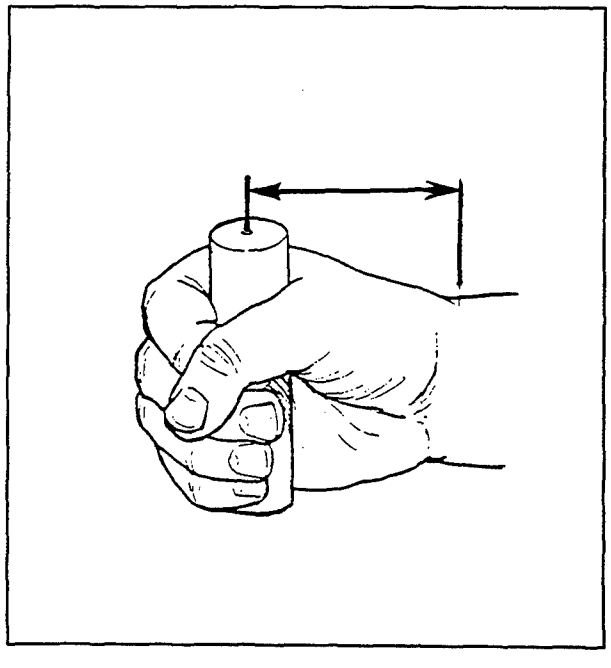
Males		
Kilograms		Pounds
79.00	Mean	173.80
0.56	SE(Mean)	1.23
10.61	SD(Mean)	23.34
0.40	SE(SD)	0.86
47.60	Minimum	104.72
133.30	Maximum	293.26
Symmetry-Veta I		3.90
Kurtosis-Veta II		4.40
Coeff. of Variation		13.4%
Sample Size		4447
Percentiles		
Kilograms		Pounds
56.97	1st	125.33
59.16	2nd	130.15
60.62	3rd	133.36
62.68	5th	137.90
65.98	10th	145.16
68.28	15th	150.22
70.13	20th	154.29
71.75	25th	157.85
73.22	30th	161.08
74.58	35th	164.08
75.90	40th	166.98
77.18	45th	169.80
78.46	50th	172.61
79.76	55th	175.47
81.10	60th	178.42
82.50	65th	181.50
84.00	70th	184.80
85.67	75th	188.47
87.58	80th	192.68
89.87	85th	197.71
92.91	90th	204.40
97.77	95th	215.09
101.20	97th	222.64
103.89	98th	228.56
108.45	99th	238.59

Females		
Kilograms		Pounds
62.10	Mean	136.62
0.44	SE(Mean)	0.97
8.16	SD(Mean)	17.95
0.31	SE(SD)	0.69
41.60	Minimum	91.52
99.50	Maximum	218.90
Symmetry-Veta I		5.30
Kurtosis-Veta II		6.20
Coeff. of Variation		13.1%
Sample Size		2888
Percentiles		
Kilograms		Pounds
45.98	1st	101.16
47.39	2nd	104.26
48.38	3rd	106.44
49.81	5th	109.58
52.19	10th	114.82
53.89	15th	118.56
55.27	20th	121.59
56.49	25th	124.28
57.59	30th	126.70
58.63	35th	128.99
59.63	40th	131.19
60.61	45th	133.34
61.59	50th	135.50
62.59	55th	137.70
63.61	60th	139.94
64.70	65th	142.34
65.86	70th	144.89
67.15	75th	147.73
68.65	80th	151.03
70.45	85th	154.99
72.87	90th	160.31
76.80	95th	168.96
79.62	97th	175.16
81.87	98th	180.11
85.73	99th	188.61

(73) Wrist-Center of Grip Length

The horizontal distance between the stylion landmark on the right wrist and the center of a dowel (1-1/4" diameter) gripped in the right hand is measured with a Poech caliper. The subject sits grasping a dowel in the right hand. The base of the dowel is flush with the bottom of the fist. The subject puts the bottom of the fist on a flat surface in such a way that the base of the dowel rests on the surface. The fist is in line with the long axis of the forearm.





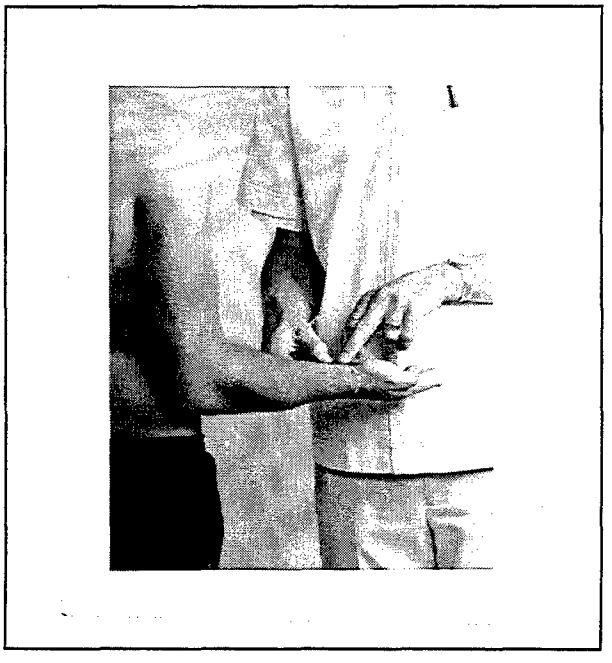
Wrist-Center of Grip Length

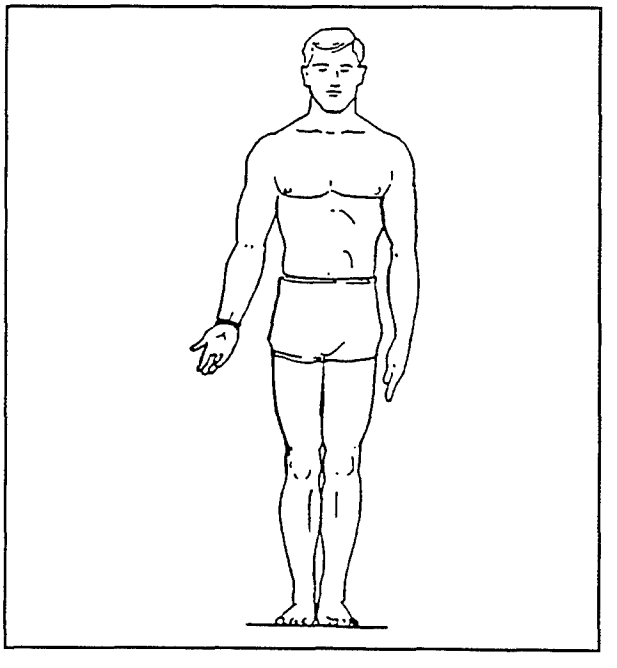
Males		
Millimeters		Inches
69.00	Mean	2.72
0.30	SE(Mean)	0.01
4.90	SD(Mean)	0.19
0.18	SE(SD)	0.01
57.00	Minimum	2.24
89.00	Maximum	3.50
Symmetry-Veta I		3.00
Kurtosis-Veta II		-1.70
Coeff. of Variation		7.1%
Sample Size		4444
Percentiles		
Millimeters		Inches
59.90	1st	2.36
60.70	2nd	2.39
61.20	3rd	2.41
62.10	5th	2.44
63.50	10th	2.50
64.50	15th	2.54
65.40	20th	2.57
66.20	25th	2.61
66.90	30th	2.63
67.60	35th	2.66
68.20	40th	2.69
68.80	45th	2.71
69.50	50th	2.74
70.10	55th	2.76
70.70	60th	2.78
71.40	65th	2.81
72.10	70th	2.84
72.90	75th	2.87
73.80	80th	2.91
74.80	85th	2.94
76.00	90th	2.99
78.00	95th	3.07
79.20	97th	3.12
80.10	98th	3.15
81.60	99th	3.21

Females		
Millimeters		Inches
65.00	Mean	2.56
0.30	SE(Mean)	0.01
5.00	SD(Mean)	0.20
0.19	SE(SD)	0.01
52.00	Minimum	2.05
83.00	Maximum	3.27
Symmetry-Veta I		2.90
Kurtosis-Veta II		-1.00
Coeff. of Variation		7.7%
Sample Size		2888
Percentiles		
Millimeters		Inches
55.00	1st	2.17
56.30	2nd	2.22
57.10	3rd	2.25
58.20	5th	2.29
59.70	10th	2.35
60.80	15th	2.39
61.70	20th	2.43
62.40	25th	2.46
63.10	30th	2.48
63.80	35th	2.51
64.40	40th	2.54
65.00	45th	2.56
65.60	50th	2.58
66.30	55th	2.61
66.90	60th	2.63
67.60	65th	2.66
68.30	70th	2.69
69.20	75th	2.72
70.10	80th	2.76
71.20	85th	2.80
72.60	90th	2.86
74.80	95th	2.94
76.10	97th	3.00
77.10	98th	3.04
78.70	99th	3.10

(74) Wrist Circumference

The circumference of the wrist perpendicular to the long axis of the forearm is measured with a tape passing over the stylion landmark on the wrist. The subject extends the right arm forward with the palm up.





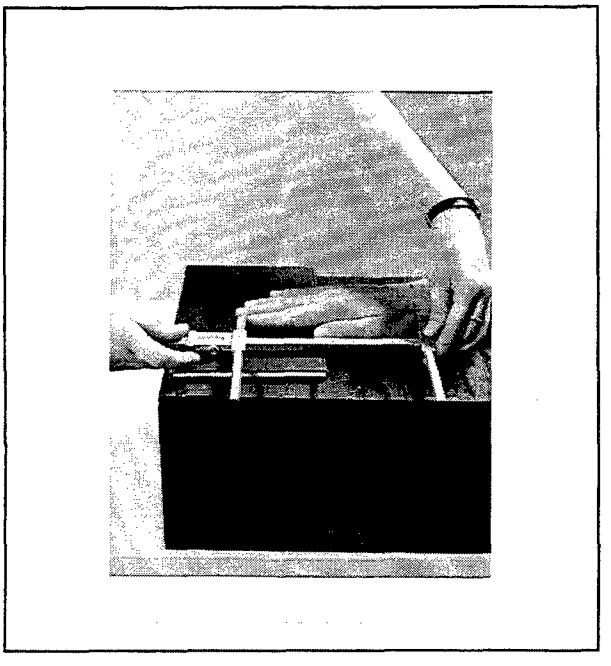
Wrist Circumference

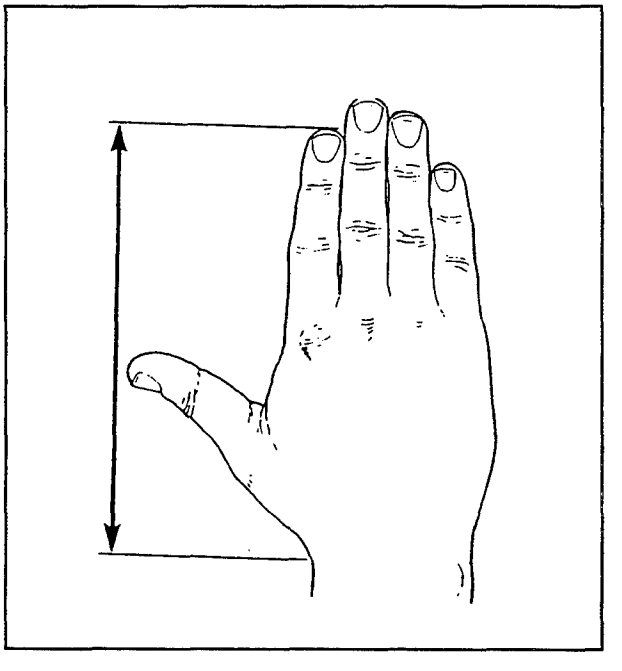
Males		
Millimeters		Inches
174.00	Mean	6.85
0.40	SE(Mean)	0.02
8.10	SD(Mean)	0.32
0.30	SE(SD)	0.01
143.00	Minimum	5.63
204.00	Maximum	8.03
Symmetry-Veta I		0.80
Kurtosis-Veta II		2.00
Coeff. of Variation		4.7%
Sample Size		4447
Percentiles		
Millimeters		Inches
156.70	1st	6.17
158.50	2nd	6.24
159.70	3rd	6.29
161.50	5th	6.36
164.30	10th	6.47
166.20	15th	6.54
167.70	20th	6.60
169.10	25th	6.66
170.30	30th	6.70
171.40	35th	6.75
172.40	40th	6.79
173.40	45th	6.83
174.40	50th	6.87
175.50	55th	6.91
176.50	60th	6.95
177.50	65th	6.99
178.60	70th	7.03
179.80	75th	7.08
181.20	80th	7.13
182.80	85th	7.20
184.90	90th	7.28
188.10	95th	7.41
190.30	97th	7.49
192.00	98th	7.56
194.80	99th	7.67

Females		
Millimeters		Inches
151.00	Mean	5.94
0.40	SE(Mean)	0.02
7.00	SD(Mean)	0.28
0.27	SE(SD)	0.01
129.00	Minimum	5.08
182.00	Maximum	7.17
Symmetry-Veta I		2.30
Kurtosis-Veta II		2.50
Coeff. of Variation		4.6%
Sample Size		2888
Percentiles		
Millimeters		Inches
135.70	1st	5.34
137.50	2nd	5.41
138.60	3rd	5.46
140.20	5th	5.52
142.60	10th	5.61
144.20	15th	5.68
145.50	20th	5.73
146.60	25th	5.77
147.60	30th	5.81
148.50	35th	5.85
149.40	40th	5.88
150.20	45th	5.91
151.10	50th	5.95
151.90	55th	5.98
152.80	60th	6.02
153.70	65th	6.05
154.70	70th	6.09
155.70	75th	6.13
156.90	80th	6.18
158.30	85th	6.23
160.20	90th	6.31
163.10	95th	6.42
165.20	97th	6.50
166.70	98th	6.56
169.30	99th	6.67

(75) Wrist-Index Finger Length

The distance between the stylion landmark on the right wrist and the tip of the right index finger is measured with a Poech caliper. The subject places the palm on a table, the fingers together, and the thumb abducted. The middle finger is parallel to the long axis of the forearm. The two distal phalanges of the fingers lie on a flat surface 8 mm higher than the table.





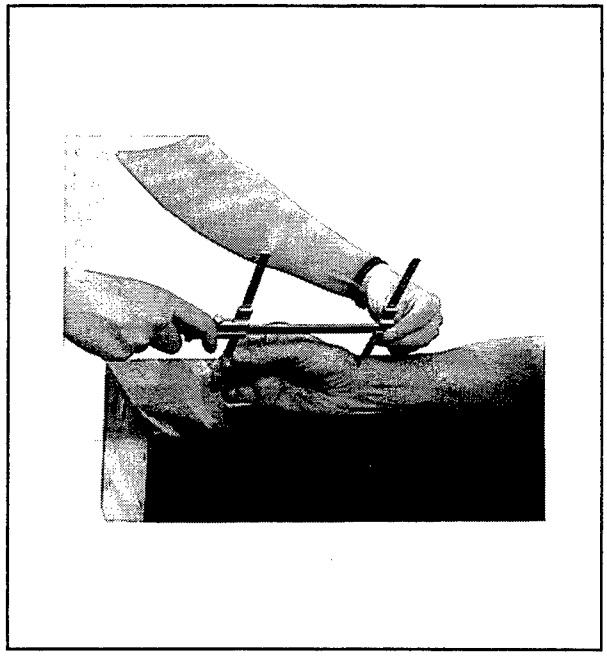
Wrist-Index Finger Length

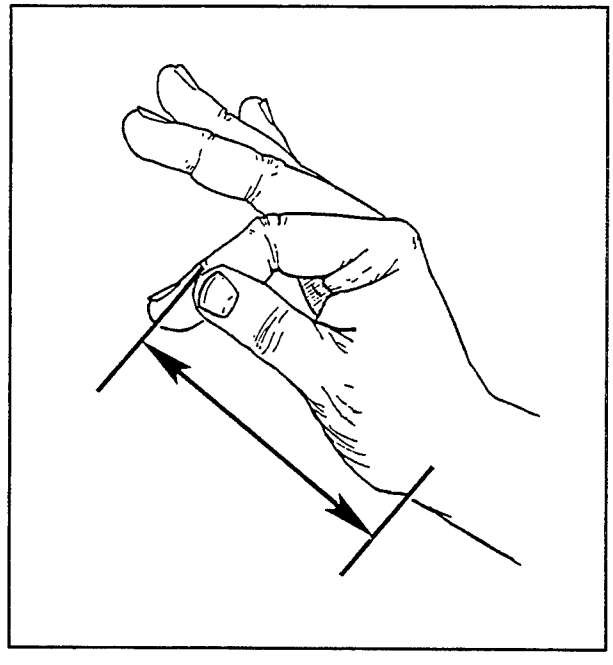
Males		
Millimeters		Inches
180.00	Mean	7.09
0.50	SE(Mean)	0.02
8.90	SD(Mean)	0.35
0.33	SE(SD)	0.01
148.00	Minimum	5.83
214.00	Maximum	8.43
Symmetry-Veta I		1.20
Kurtosis-Veta II		0.70
Coeff. of Variation		4.9%
Sample Size		4443
Percentiles		
Millimeters		Inches
160.00	1st	6.30
162.50	2nd	6.40
164.00	3rd	6.46
166.10	5th	6.54
169.20	10th	6.66
171.20	15th	6.74
172.90	20th	6.81
174.30	25th	6.86
175.60	30th	6.91
176.80	35th	6.96
178.00	40th	7.01
179.10	45th	7.05
180.20	50th	7.09
181.30	55th	7.14
182.50	60th	7.19
183.70	65th	7.23
185.00	70th	7.28
186.40	75th	7.34
188.00	80th	7.40
189.90	85th	7.48
192.20	90th	7.57
195.80	95th	7.71
198.10	97th	7.80
199.80	98th	7.87
202.50	99th	7.97

Females		
Millimeters		Inches
168.00	Mean	6.61
0.50	SE(Mean)	0.02
8.60	SD(Mean)	0.34
0.33	SE(SD)	0.01
140.00	Minimum	5.51
202.00	Maximum	7.95
Symmetry-Veta I		1.90
Kurtosis-Veta II		1.50
Coeff. of Variation		5.1%
Sample Size		2888
Percentiles		
Millimeters		Inches
148.90	1st	5.86
151.10	2nd	5.95
152.60	3rd	6.01
154.50	5th	6.08
157.40	10th	6.20
159.40	15th	6.28
160.90	20th	6.33
162.30	25th	6.39
163.60	30th	6.44
164.70	35th	6.48
165.80	40th	6.53
166.90	45th	6.57
168.00	50th	6.61
169.10	55th	6.66
170.20	60th	6.70
171.30	65th	6.74
172.60	70th	6.80
173.90	75th	6.85
175.50	80th	6.91
177.30	85th	6.98
179.70	90th	7.07
183.20	95th	7.21
185.60	97th	7.31
187.40	98th	7.38
190.30	99th	7.49

(76) Wrist-Thumbtip Length

The horizontal distance between the stylion landmark on the right wrist and the tip of the right thumb is measured with a Poech caliper. The subject rests the little finger side of the hand on a flat surface. The thumb is held straight and in line with the long axis of the forearm. The thumb rests on the first knuckle of the curved index finger.





Wrist-Thumbtip Length

Males		
Millimeters		Inches
124.00	Mean	4.88
0.30	SE(Mean)	0.01
6.60	SD(Mean)	0.26
0.24	SE(SD)	0.01
102.00	Minimum	4.02
152.00	Maximum	5.98
Symmetry-Veta I		1.40
Kurtosis-Veta II		1.10
Coeff. of Variation		5.3%
Sample Size		4444
Percentiles		
Millimeters		Inches
109.10	1st	4.30
110.90	2nd	4.37
112.10	3rd	4.41
113.60	5th	4.47
116.00	10th	4.57
117.60	15th	4.63
118.80	20th	4.68
119.90	25th	4.72
120.80	30th	4.76
121.70	35th	4.79
122.50	40th	4.82
123.30	45th	4.85
124.10	50th	4.89
124.90	55th	4.92
125.80	60th	4.95
126.60	65th	4.98
127.50	70th	5.02
128.50	75th	5.06
129.60	80th	5.10
130.90	85th	5.15
132.60	90th	5.22
135.30	95th	5.33
137.10	97th	5.40
138.50	98th	5.45
140.90	99th	5.55

Females		
Millimeters		Inches
116.00	Mean	4.57
0.40	SE(Mean)	0.02
6.60	SD(Mean)	0.26
0.25	SE(SD)	0.01
95.00	Minimum	3.74
144.00	Maximum	5.67
Symmetry-Veta I		1.60
Kurtosis-Veta II		1.20
Coeff. of Variation		5.7%
Sample Size		2888
Percentiles		
Millimeters		Inches
102.00	1st	4.02
103.80	2nd	4.09
104.90	3rd	4.13
106.40	5th	4.19
108.60	10th	4.28
110.00	15th	4.33
111.20	20th	4.38
112.20	25th	4.42
113.20	30th	4.46
114.00	35th	4.49
114.90	40th	4.52
115.70	45th	4.56
116.50	50th	4.59
117.30	55th	4.62
118.20	60th	4.65
119.10	65th	4.69
120.00	70th	4.72
121.10	75th	4.77
122.20	80th	4.81
123.60	85th	4.87
125.40	90th	4.94
128.10	95th	5.04
129.80	97th	5.11
131.10	98th	5.16
133.00	99th	5.24

CHAPTER III

TARIFFS

INTRODUCTION

The statistically matched anthropometric databases were used to derive tariffs for a total of 42 clothing items. To derive the tariffs, garment sizing charts were used to determine the predicted size of each subject in the anthropometric databases based on key dimensions. The proportion of individuals in each size category was then determined and multiplied by 10 to arrive at the purchasing tariff per 1000 items.

The tariffs for the 9 men's dress clothing items were determined using the USMC male anthropometric database, and the tariffs for the 9 women's dress clothing items were derived from the USMC female anthropometric database. One of the utility clothing items, the Combat Vehicle Crewman's Coverall (MIL-C-44077A) is only worn by male marines, so the tariff is based exclusively on male data.

For the remaining 23 utility clothing items, a total of 3 tariffs were determined. The first tariff presented for each item is based exclusively on male data and should be used when purchasing items for male only units. The tariff based exclusively on female data should be used when purchasing items for an all female unit. The combined tariffs, weighted using the proportion of male and female marines in the February 1995 USMC population (95.54% male and 4.46% female), should be used when purchasing items for mixed gender units. However, if the proportion of female Marines in a specific unit are not comparable to that of the general USMC population, then the tariff for that unit should be determined using the method described below.

DETERMINING TARIFFS FOR MIXED GENDER UNITS

If tariffs are required for units with a different proportion of males and females, then the all male unit and all female unit tariffs can be multiplied by the desired proportion and summed to determine the best tariff for that particular unit. The following table demonstrates how to calculate a ground troops and

parachutists helmet (MIL-H-44099A) tariff for a theoretical USMC population composed of 50% female and 50% male Marines.

Helmet, Ground Troops and Parachutists (MIL-H-44099A)

	Male Unit	50% Male	Female Unit	50% Female	General USMC
X-Small	0	0.0	52	26.0	26
Small	121	60.5	654	327.0	388
Medium	445	222.5	261	130.5	353
Large	402	201.0	32	16.0	217
X-Large	32	16.0	1	0.5	16

MEN'S DRESS CLOTHING TARIFFS

USMC Tariff
Men's Trousers, Polyester/Wool Gabardine (M-T-29452A)

[redacted]	X-Short	Short	Regular	Long	X-Long
26	0	0	0	0	0
27	0	1	0	0	0
28	3	5	2	0	0
29	6	12	7	2	0
30	12	23	19	4	0
31	9	35	35	10	2
32	12	40	36	11	3
33	14	37	47	15	1
34	13	39	40	14	2
35	15	42	41	14	1
36	14	39	28	10	1
37	13	33	27	5	1
38	10	26	21	5	1
39	5	17	23	4	1
40	4	13	14	6	1
41	2	10	10	3	1
42	2	5	5	5	0
43	0	1	3	0	0
44	0	1	2	1	0
45	0	1	0	1	0
46	0	1	0	0	0

USMC Tariff
Men's Long Sleeve Shirt (M-S-3649F(MC))

	29	30	31	32	33	34	35	36	37	38
13	0	0	0	0	1	1	not a size	not a size	not a size	not a size
13 1/2	0	0	0	2	2	5	3	1	0	not a size
14	0	0	0	4	13	20	19	12	4	1
14 1/2	0	0	2	5	22	41	45	43	15	5
15	0	0	0	5	17	51	81	62	28	11
15 1/2	0	0	0	1	11	39	67	65	52	23
16	0	0	0	0	3	12	33	38	31	19
16 1/2	not a size	0	0	0	1	5	10	17	17	11
17	not a size	not a size	not a size	0	0	1	4	5	9	not a size
17 1/2	not a size	not a size	not a size	0	0	0	0	1	2	not a size
18	not a size	not a size	not a size	not a size	0	0	0	2	not a size	not a size

USMC Tariff
Men's Quarter Sleeve Shirt (M-S-19984E(MC))

Size	Tariff
13	2
13 1/2	13
14	73
14 1/2	178
15	255
15 1/2	258
16	136
16 1/2	61
17	19
17 1/2	5

USMC Tariff
Men's Dress Coat, Polyester/Wool Gabardine, Green (M-C-29424A(MC))

	X-Short	Short	Regular	Long	X-Long
30	0	0	0	0	not a size
32	0	1	0	0	not a size
33	0	1	2	0	not a size
34	1	5	3	1	not a size
35	3	8	14	3	1
36	4	16	28	14	2
37	4	23	40	25	3
38	3	26	55	41	5
39	1	26	70	40	11
40	1	27	59	54	15
41	1	17	58	42	9
42	1	16	42	35	8
43	not a size	5	24	19	9
44	not a size	1	12	14	6
46	not a size	2	12	16	6
48	not a size	not a size	3	4	2

USMC Tariff
Men's Dress Coat, Polyester/Wool Gabardine, Blue (M-C-19516G(MC))

	X-Short	Short	Regular	Long	X-Long
30	0	0	0	0	not a size
32	0	1	0	0	not a size
33	0	1	2	0	not a size
34	1	5	3	1	not a size
35	3	8	14	3	1
36	4	16	28	14	2
37	4	23	40	25	3
38	3	26	55	41	5
39	1	26	70	40	11
40	1	27	59	54	15
41	1	17	58	42	9
42	1	16	42	35	8
43	0	5	24	19	9
44	0	1	12	14	6
46	0	2	12	16	6
48	0	1	2	4	2

USMC Tariff
Men's Dress Coat, Wool Serge, Green (MIL-C-3771G(MC))

	X-Short	Short	Regular	Long	X-Long
30	0	0	0	0	not a size
32	0	1	0	0	not a size
33	0	1	2	0	not a size
34	1	5	3	1	not a size
35	3	8	14	3	1
36	4	16	28	14	2
37	4	23	40	25	3
38	3	26	55	41	5
39	1	26	70	40	11
40	1	27	59	54	15
41	1	17	58	42	9
42	1	16	42	35	8
43	not a size	5	24	19	9
44	not a size	1	12	14	6
46	not a size	2	12	16	6
48	not a size	not a size	3	4	2

USMC Tariff
Men's Coat, All Weather (M-C-29380D)

	X-Short	Short	Regular	Long	X-Long
30	not a size	0	0	not a size	not a size
32	0	1	0	0	not a size
34	1	6	5	1	0
36	7	24	42	17	3
38	7	49	95	66	8
40	2	53	129	94	26
42	2	33	100	77	17
44	not a size	6	36	33	15
46	not a size	2	12	16	6
48	not a size	not a size	3	4	2

USMC Tariff
Men's Frame Cap

Size	Tariff
6 1/2	1
6 5/8	5
6 3/4	20
6 7/8	81
7	165
7 1/8	243
7 1/4	224
7 3/8	164
7 1/2	62
7 5/8	27
7 3/4	7
7 7/8	1

USMC Tariff
Men's Garrison Cap

Size	Tariff
6 1/2	1
6 5/8	5
6 3/4	20
6 7/8	81
7	165
7 1/8	243
7 1/4	224
7 3/8	164
7 1/2	62
7 5/8	27
7 3/4	7
7 7/8	1

WOMEN'S DRESS CLOTHING TARIFFS

USMC Tariff
Women's Skirt (MIL-S-29429A(MC))

	Short	Regular	Long
X0	0	0	not a size
2	1	0	0
4	7	2	0
6	23	15	2
8	97	66	7
10	128	111	13
12	102	120	16
14	72	93	22
16	16	41	8
18	not a size	33	5

USMC Tariff
Women's Slacks (MIL-S-29432A(MC))

	Short	Regular	Long
X0	0	0	0
2	1	0	0
4	7	2	0
6	23	15	2
8	97	66	7
10	128	111	13
12	102	120	16
14	72	93	22
16	16	41	8
18	8	25	5

USMC Tariff
Women's Shirt, Long Sleeve (MIL-S-29368C)

	Short	Regular	Long
X0	2	1	not a size
2	12	7	0
4	25	16	2
6	58	37	5
8	107	103	7
10	122	122	18
12	68	89	17
14	47	59	15
16	13	26	5
18	not a size	14	3

USMC Tariff
Women's Shirt, Short Sleeve (MIL-S-29368C)

	Short	Regular	Long
X0	2	1	not a size
2	12	7	0
4	25	16	2
6	58	37	5
8	107	103	7
10	122	122	18
12	68	89	17
14	47	59	15
16	13	26	5
18	not a size	14	3

USMC Tariff
Women's Dress Coat (MIL-C-29427A(MC))

	Short	Regular	Long
X0	1	0	not a size
2	4	0	0
4	18	7	0
6	42	28	4
8	96	69	5
10	126	106	13
12	94	126	17
14	59	86	21
16	15	35	6
18	not a size	18	4

USMC Tariff
Women's Dress Coat, Wool/Polyester, Gabardine, Blue (MIL-C-29453A(MC))

	Short	Regular	Long
X0	1	0	not a size
2	4	0	0
4	18	7	0
6	42	28	4
8	96	69	5
10	126	106	13
12	94	126	17
14	59	86	21
16	15	35	6
18	not a size	18	4

USMC Tariff
Women's Dress Cap

Size	Tariff
21	203
21 1/2	336
22	277
22 1/2	145
23	31
23 1/2	6
24	2

USMC Tariff
Women's Service Cap

Size	Tariff
21	203
21 1/2	336
22	277
22 1/2	145
23	31
23 1/2	6
24	2

USMC Tariff
Women's Garrison Cap

Size	Tariff
21	203
21 1/2	336
22	277
22 1/2	145
23	31
23 1/2	6
24	2

MALE ONLY UTILITY CLOTHING TARIFFS

USMC Tariffs
Combat Vehicle Crewman's Coverall (MIL-C-44077A)

	X-Small	Small	Medium	Large	X-Large
Short	1	64	103	25	2
Regular	2	104	318	117	9
Long	0	31	139	73	12

MALE AND FEMALE UTILITY CLOTHING TARIFFS

USMC Tariffs
BDU Coat Woodland Camouflage

All Male Unit

	X-Small	Small	Medium	Large	X-Large
XX-Short	not a size	0	0	not a size	not a size
X-Short	0	5	3	0	not a size
Short	1	60	100	24	not a size
Regular	2	104	318	118	11
Long	not a size	30	132	68	12
X-Long	not a size	1	6	5	not a size

All Female Unit

	X-Small	Small	Medium	Large	X-Large
XX-Short	not a size	8	2	not a size	not a size
X-Short	49	185	55	5	not a size
Short	51	343	146	20	not a size
Regular	10	66	52	5	0
Long	not a size	1	1	1	0
X-Long	not a size	0	0	0	not a size

General USMC

	X-Small	Small	Medium	Large	X-Large
XX-Short	not a size	1	0	not a size	not a size
X-Short	2	13	5	1	not a size
Short	3	73	102	24	not a size
Regular	2	102	306	113	10
Long	not a size	29	126	65	11
X-Long	not a size	1	6	5	not a size

USMC Tariffs
BDU Coat Desert Camouflage

All Male Unit

	X-Small	Small	Medium	Large	X-Large
XX-Short	not a size	0	0	not a size	not a size
X-Short	0	5	3	0	not a size
Short	1	60	100	24	not a size
Regular	2	104	318	118	11
Long	not a size	30	132	68	12
X-Long	not a size	1	6	5	not a size

All Female Unit

	X-Small	Small	Medium	Large	X-Large
XX-Short	not a size	8	2	not a size	not a size
X-Short	49	185	55	5	not a size
Short	51	343	146	20	not a size
Regular	10	66	52	5	0
Long	not a size	1	1	1	0
X-Long	not a size	0	0	0	not a size

General USMC

	X-Small	Small	Medium	Large	X-Large
XX-Short	not a size	1	0	not a size	not a size
X-Short	2	13	5	1	not a size
Short	3	73	102	24	not a size
Regular	2	102	306	113	10
Long	not a size	29	126	65	11
X-Long	not a size	1	6	5	not a size

USMC Tariffs
BDU Trouser, Woodland Camouflage

All Male Unit

	X-Small	Small	Medium	Large	X-Large
X-Short	0	2	2	not a size	not a size
Short	1	46	85	62	12
Regular	1	111	261	176	52
Long	0	28	86	45	25
X-Long	not a size	1	3	1	not a size

All Female Unit

	X-Small	Small	Medium	Large	X-Large
X-Short	12	72	46	not a size	not a size
Short	31	282	240	76	16
Regular	9	97	80	27	4
Long	1	4	3	1	0
X-Long	not a size	0	0	0	not a size

General USMC

	X-Small	Small	Medium	Large	X-Large
X-Short	1	5	4	not a size	not a size
Short	2	57	92	63	12
Regular	1	110	253	169	50
Long	0	27	82	43	24
X-Long	not a size	1	3	1	not a size

USMC Tariffs
BDU Trouser, Desert Camouflage

All Male Unit

	X-Small	Small	Medium	Large	X-Large
X-Short	0	2	2	not a size	not a size
Short	1	46	85	62	12
Regular	1	111	261	176	52
Long	0	28	86	45	25
X-Long	not a size	1	3	1	not a size

All Female Unit

	X-Small	Small	Medium	Large	X-Large
X-Short	12	72	46	not a size	not a size
Short	31	282	240	76	16
Regular	9	97	80	27	4
Long	1	4	3	1	0
X-Long	not a size	0	0	0	not a size

General USMC

	X-Small	Small	Medium	Large	X-Large
X-Short	1	5	4	not a size	not a size
Short	2	57	92	63	12
Regular	1	110	253	169	50
Long	0	27	82	43	24
X-Long	not a size	1	3	1	not a size

USMC Tariffs
BDU Cap (MIL-C-1911J)

Size	Male Unit	Female Unit	General USMC
6 3/8	0	10	1
6 1/2	1	31	2
6 5/8	5	106	10
6 3/4	20	200	28
6 7/8	81	271	89
7	165	203	167
7 1/8	242	128	237
7 1/4	224	41	216
7 3/8	164	13	157
7 1/2	62	4	59
7 5/8	27	2	26
7 3/4	9	1	9

USMC Tariffs
Cold Weather Field Coat (M-C-43455J)

All Male Unit

	X-Short	Short	Regular	Long
X-Small	0	1	2	0
Small	5	60	104	31
Medium	3	100	317	138
Large	not a size	25	118	73
X-Large	not a size	2	9	12

All Female Unit

	X-Short	Short	Regular	Long
X-Small	48	51	10	1
Small	193	342	66	1
Medium	58	145	52	1
Large	not a size	25	5	1
X-Large	not a size	1	0	0

General USMC

	X-Short	Short	Regular	Long
X-Small	2	3	2	0
Small	13	73	102	30
Medium	6	102	305	132
Large	not a size	25	113	70
X-Large	not a size	2	9	11

USMC Tariffs
Helmet, Ground Troops and Parachutists (MIL-H-44099A)

	Male Unit	Female Unit	General USMC
X-Small	0	52	2
Small	121	654	145
Medium	445	261	437
Large	402	32	385
X-Large	32	1	31

USMC Tariffs
Helmet, Liner, Cold Weather (MIL-C-43549C)

	Male Unit	Female Unit	General USMC
6 1/2	9	203	18
6 3/4	138	494	154
7	444	265	436
7 1/4	341	36	327
7 1/2	63	2	60
7 3/4	5	0	5

USMC Tariffs
Body Armor (MIL-B-44053)

	Male Unit	Female Unit	General USMC
X-Small	3	110	8
Small	199	709	222
Medium	560	164	542
Large	215	16	206
X-Large	23	1	22

USMC Tariffs
Cap, Utility, Camouflage (MIL-C-29366B)

	Male Unit	Female Unit	General USMC
XX-Small	1	39	3
X-Small	25	304	37
Small	246	473	256
Medium	466	167	452
Large	226	15	218
X-Large	36	2	34

USMC Tariffs
Extreme Cold Weather Parka (MIL-P-43496F)

	Male Unit	Female Unit	General USMC
X-Small	3	110	8
Small	199	602	217
Medium	560	256	546
Large	215	31	207
X-Large	23	1	22

USMC Tariffs
Extreme Cold Weather Parka Liner (MIL-L-43466C)

	Male Unit	Female Unit	General USMC
X-Small	3	110	8
Small	199	602	217
Medium	560	256	546
Large	215	31	207
X-Large	23	1	22

USMC Tariffs
Extreme Cold Weather Trouser (MIL-T-43654D)

All Male Unit

	X-Small	Small	Medium	Large	X-Large
Short	1	47	87	62	12
Regular	1	111	262	176	52
Long	0	29	89	46	25

All Female Unit

	X-Small	Small	Medium	Large	X-Large
Short	43	354	286	76	16
Regular	9	97	80	27	4
Long	0	4	3	1	0

General USMC

	X-Small	Small	Medium	Large	X-Large
Short	3	61	96	63	12
Regular	1	110	254	169	50
Long	0	28	85	44	24

USMC Tariffs
Extreme Cold Weather Trouser Liner (MIL-T-43672C)

All Male Unit

	X-Small	Small	Medium	Large	X-Large
Short/Reg	2	158	349	238	64
Long	0	29	89	46	25

All Female Unit

	X-Small	Small	Medium	Large	X-Large
Short/Reg	52	451	366	103	20
Long	0	4	3	1	0

General USMC

	X-Small	Small	Medium	Large	X-Large
Short/Reg	4	171	350	232	62
Long	0	28	85	44	24

USMC Tariffs
Parka, Wet Weather, Olive Green (MIL-P-43907C)

	Male Unit	Female Unit	General USMC
X-Small	3	110	8
Small	199	602	217
Medium	560	256	546
Large	215	31	207
X-Large	23	1	22

USMC Tariffs
Trouser, Wet Weather, Olive Green (MIL-P-43907C)

	Male Unit	Female Unit	General USMC
X-Small	2	52	4
Small	187	455	199
Medium	438	369	435
Large	284	104	276
X-Large	89	20	86

USMC Tariffs
Parka, Wet Weather, Woodland Camouflage (MIL-P-43907C)

	Male Unit	Female Unit	General USMC
X-Small	3	110	8
Small	199	602	217
Medium	560	256	546
Large	215	31	207
X-Large	23	1	22

USMC Tariffs
Trouser, Wet Weather, Woodland Camouflage (MIL-P-43907C)

	Male Unit	Female Unit	General USMC
X-Small	2	52	4
Small	187	455	199
Medium	438	369	435
Large	284	104	276
X-Large	89	20	86

USMC Tariffs
Goretex Parka (MIL-P-44188D)

All Male Unit

	X-Small	Small	Medium	Large	X-Large
X-Short	0	5	3	not a size	not a size
Short	1	60	100	25	not a size
Regular	2	103	318	117	11
Long	0	31	139	73	12

All Female Unit

	X-Small	Small	Medium	Large	X-Large
X-Short	200	95	8	not a size	not a size
Short	296	223	39	2	not a size
Regular	55	67	11	1	0
Long	1	1	1	0	0

General USMC

	X-Small	Small	Medium	Large	X-Large
X-Short	9	9	3	not a size	not a size
Short	14	67	97	24	not a size
Regular	4	101	304	112	11
Long	0	30	133	70	12

USMC Tariffs
Goretex Trouser (MIL-T-44189C)

All Male Unit

	X-Small	Small	Medium	Large	X-Large
X-Short	0	2	2	not a size	not a size
Short	1	45	85	62	not a size
Regular	1	111	262	176	63
Long	0	29	89	46	26

All Female Unit

	X-Small	Small	Medium	Large	X-Large
X-Short	12	72	46	not a size	not a size
Short	31	282	240	76	not a size
Regular	9	97	80	27	20
Long	0	4	3	1	0

General USMC

	X-Small	Small	Medium	Large	X-Large
X-Short	1	5	4	not a size	not a size
Short	2	56	92	63	not a size
Regular	1	110	254	169	61
Long	0	28	85	44	25

USMC Tariffs
Chemical Protective Shirt (MIL-U-44435(GL))

	Male Unit	Female Unit	General USMC
X-Small	14	219	23
Small	319	600	331
Medium	531	164	515
Large	127	16	122
X-Large	9	1	9

USMC Tariffs
Chemical Protective Drawers (MIL-U-44435(GL))

	Male Unit	Female Unit	General USMC
X-Small	13	130	18
Small	280	497	290
Medium	427	288	421
Large	228	72	221
X-Large	52	13	50

USMC Tariffs
Chemical Protective Suit (MIL-S-43926J)

Suit over underwear			
	Male Unit	Female Unit	General USMC
XXX-Small	0	0	0
XX-Small	2	53	4
X-Small	188	454	200
Small	438	368	435
Medium	283	104	275
Large	89	21	86
X-Large	0	0	0
XX-Large	0	0	0

CP Suit over BDU			
	Male Unit	Female Unit	General USMC
XXX-Small	0	0	0
XX-Small	0	0	0
X-Small	2	53	4
Small	188	454	200
Medium	438	368	435
Large	283	104	275
X-Large	89	21	86
XX-Large	0	0	0

CP Suit Over Cold Weather Field Clothing			
	Male Unit	Female Unit	General USMC
XXX-Small	0	0	0
XX-Small	0	0	0
X-Small	0	0	0
Small	2	53	4
Medium	188	454	200
Large	438	368	435
X-Large	283	104	275
XX-Large	89	21	86

CP Suit over Extended Cold Weather Clothing			
	Male Unit	Female Unit	General USMC
XXX-Small	0	0	0
XX-Small	0	0	0
X-Small	0	0	0
Small	0	0	0
Medium	2	53	4
Large	188	454	200
X-Large	438	368	435
XX-Large	372	125	361

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APPENDICES

APPENDIX A
OBSERVER ERROR

APPENDIX B
GLOSSARY OF TERMS

APPENDIX B
GLOSSARY OF TERMS

Orientation Terms:

Anatomical Position - subject standing erect with feet pointed forward and hands at the side of the body with forward-facing palms (Bass, 1987).

Anterior -located toward the front side of the body (Aiello and Dean, 1990).

Coronal Plane - the vertical plane extending from the top of the head to the soles of the feet that divides the front and back of the body (Aiello and Dean, 1990).

Distal - the end of the limb or bone in question that lies the farthest away from the central trunk of the body or head (Bass, 1987).

Dorsal - located toward the back side of the body (Aiello and Dean, 1990).

Extended - the part of body in question is moved so as to create a straight line (Steele and Bramblett, 1988).

Flexed - the bending of connecting body parts from their original anatomical positions so that they are brought together (Aiello and Dean, 1990).

Hyperextended - to perform an extending movement to an extreme degree (Steele and Bramblett, 1988).

Frankfort Plane - a standard horizontal plane used to position the head on a straight line between the right lower eye orbit and right ear hole.

Inferior - located toward the soles, or bottom, of the feet (Aiello and Dean. 1990).

Lateral - located toward the sides, and away from the center, of the body (Aiello and Dean, 1990).

Medial - located toward the middle or medial plane of the body (Steele and Bramblett, 1988).

Midsagittal Plane - the vertical plane that bisects the body into right and left halves (Steele and Bramblett, 1988).

Palmar - pertaining to the palm side of the hand.

Plantar - pertaining to the sole, or bottom, of the foot.

Posterior - located toward the back side of the body; behind (Aiello and Dean, 1990).

Proximal - the end of the limb or bone in question that lies closest to the central trunk of the body or head (Bass, 1987).

Superior - closer to the top of the head while subject is standing in anatomical position (Aiello and Dean, 1990).

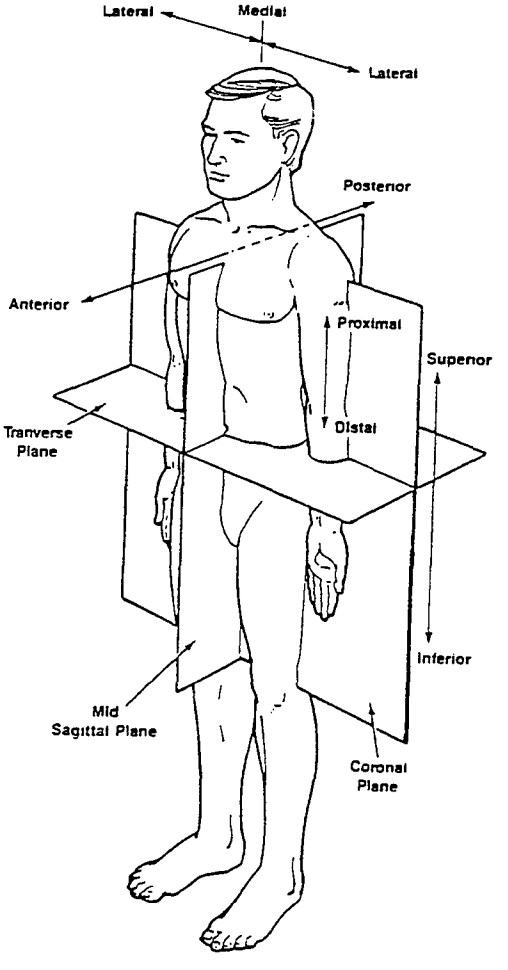

Figure B1. Human body in anatomical position with orientation planes.

Anatomical Terms:

Axillary - pertaining to the armpit, or axilla.

Biceps - the large muscle located on the front side of the upper arm.

Canthus - a corner or angle formed by the meeting of the eyelids on the side closest to the ears.

Deltoid Muscle - the large, U-shaped muscle that extends from the clavicle, over the shoulder area, and halfway down the upper arm; provides the major lifting force for the upper arm (Aiello and Dean, 1990).

Epicondyle - the bony eminence located at the lower end of several long bones.

Femoral Epicondyle - the bony projections on both sides of the lower end of the femur.

Femur - the thigh bone.

Fossa - a slight pit or depression on a bone's surface.

Frontal Bone - the bone that underlies the forehead.

Iliac Crest - when the subject is standing in the anatomical position, this is the upper rim of the pelvic bone.

Ilium (Iliac) - a large, fan-like bone that fuses with two other bones to form one side of the pelvic cavity.

Latissimus Dorsi - a large muscle located on the lower back that extends from just above the waist to behind the armpit.

Malleolus - a rounded, bony projection that is located on either side of the ankle.

Mandible - the jawbone.

Mastoid Process - a bony projection located on the temporal part of the skull, directly behind the earlobe.

Metacarpophalangeal Joint - the knuckle joint formed between a finger bone and a palm bone.

Metatarsophalangeal Joint - the joint formed by the juncture of a toe bone and a foot bone.

Olecranon - the elbow, or lower end of the ulna when held in anatomical position.

Patella - the kneecap.

Phalanx - a finger or toe bone.

Pisiform - a protruding wrist bone located at the base of the palm on the little finger side of the hand.

Radius - the smaller forearm bone, located on the same side as the thumb of the hand.

Scye - the armhole of a garment, as defined by tailors for garment manufacture.

Temporal Crest - a slight ridge that originates at the skull's frontal bone, and runs along the side of the skull.

Thoracic - pertaining to the thorax, especially those vertebrae that attach to ribs.

Thorax - the central part of the trunk ,enclosed by the rib cage, between the neck and the abdomen.

Trapezius - the major muscle involved in upwards movement of the scapula, extending between the rear base of the skull down the back to the subject's scapula (Aiello and Dean, 1990).

Vertebra - a bone of the spine; humans possess 33.

Zygomatic Arch - the bony arch that lies below and to the lateral side of the eye orbit.

Zygomatic Bone - the upper cheek bone.

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